The Builder.

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The Water Supply of the Country.

THE supply of water requisite for the growth of the crops throughout the United Kingdom is a subject which has been scandalously neglected. It is one of the utmost economic importance. Taken in connexion with those provisions for artificial harvesting to which we have, on former occasions, directed the attention of our readers, it is a matter that may make all the difference between plenty and famine. Our incredible national neglect of a branch of natural engineering that was practised, with abundant returns, more than 4,000 years ago, has been punished, in the present year, by the loss of a large portion of our green crops. We helplessly look up to the sky for the precious showers which we know to be uncertain in their distribution, at the time when, by a due employment of the means which science places at our disposal, we might render a large portion of our pastoral acreage independent of the caprices of the seasons.

There are few subjects of such ever-fresh interest to the Englishman as the weather. Abroad, indeed, it is said of us, that the changes to which our climate is so unusually liable form the sole topic of our ordinary conversation. There is, further, this grave peculiarity attendant on the investigation; that in no branch of study are the prime laws and master-facts so simple, while the details, by their extreme multiplicity, have as yet entirely mocked every effort to reduce them to order. Not only are more direct observations taken, by special and ingenious instruments,—as to the barometric pressure, the hygrometric charge, the thermometric condition, of the atmosphere, the prevailing currents of the winds, the form of the clouds, and the actual amount of rainfall at determined stations,—than are devoted to almost every other scientific inquiry, but the attention of the most patient observer, and the most clear-sighted discoverers has been turned, from the earliest recorded period of history, to the subject of pre-indications of the weather.

In spite of all this thought and observation, prediction of the change, or the permanency, of weather remains pretty much what it has been from the earliest times. In one respect, indeed, we have obtained a very valuable advance. The all-but instantaneous means of communicating intelligence afforded by the electric telegraph, by furnishing us with particulars of atmospheric pressure at widely different points, enables us to foretell meteoric movements, within certain limits, with considerable accuracy. This is, indeed, a species of prediction; but it is that kind of fore-knowledge which consists only in the certitude of what is actually taking place at some distance, the course and sequence of which is comparatively certain.

While the knowledge of scientific men is so limited that but one single ray of light, to which we may hereafter refer, has yet been thrown on the future of the question, it is not surprising how prodigious is the amount of ignorance which persons by no means uneducated are not ashamed to own, and even to cherish, as "weather wisdom." The function of the barometer, simple as it is, is for the most part altogether misunderstood. We cannot recal the title of a single work that is altogether satisfactory on this subject. Thus people will consult "the glass" with a blind faith that its rise and fall have a certain message for them; nor are they taught, by constant disappointment, that local indications of barometric pressure form but one, ont of many, of the series of elements that have to be taken into account in forecasting the state of the weather even for a quarter of a day.

Again, the known connexion of the syzygies and oppositions of the moon, with the tidal phenomena of the ocean of water that surrounds the earth, has led many to fancy they can take a short cut to the knowledge of the unknown influences of this planet on the aërial tides and currents. Tabulated observations, indeed, show that no coincidence has been detected between the arrival of the moon at her "quarters," and the changes of the weather. But the theory is convenient, and therefore, with many adherents, it is waste of time to demonstrate that it is false.

Astrologers have also set themselves to predict the weather. It is, very likely, a matter much to be regretted that the heroic and incredible ignorance, as to positive science, of most of those who seek to read the cypher of the stars, has deterred really scientific men from any examination of the important physical facts which are obscured by astrological jargon. The view of the solar system as an arrangement of celestial electro magnets, the relative position of each of which affects for the moment the condition of every other, is one of which it is impossible to deny the propriety. In a careful study of the effect of the several aspects of those closely inter-related bodies may yet be detected some clue to the great question.

But could laws of observation, or even of prediction, be thus arrived at, the grand difficulty of local difference would still remain. The causes of weather seem to be capriciously local. Astronomic influence, if such there be, is to be regarded as affecting the entire planet, or at least its great geographical divisions. But what does the inhabitant of the valley of the Severn or of the Mersey care, comparatively speaking, for the state of the weather at Greenwich?

The main laws affecting the general rainfall of our country are, as we have said, few and simple. The tendency of warm air to ascend, and of cold air to descend, is one. The power of air to hold water in invisible suspension, in proportion to temperature, is another. On this, and on the radiant nature of heat, depends the phenomenon of the dew. The rotation of the earth on its axis, and the deflexion produced, on a northward or southward current of air or of water, by the constantly decreasing rotary velocity of the surface over which it passes, is a third. Gravitation, as modified by the relative positions of the sun, the earth, and the moon (the gravitative disturbance affected by the other planets is almost inappreciable), has a powerful effect on the sea, and has an undetermined effect on the air.

Beyond all these known forces there are abundant indications of the existence of one that is as yet unknown, and, for the most part, unsuspected. It would seem to be a species of terrestrial electro-magnetism. The existence of this force, on the proper appreciation of which we hold that a true comprehension of meteoric phenomena must depend, is indicated by two very distinct sets of signs. These are to be found in the province of physics, and in that of organic life. The action of the barometer, and the habit of many animal tribes, point to a telluric impulse being the origin of atmospheric change.

We have spoken with discontent of the teaching of scientific books on the subject of the barometer. As to that part of the theory of this instrument which we owe to its great inventor, the admirable Pascal, there is no room for doubt. The function of the varying column of mercury in denoting the actual pressure per square inch on the exposed surface of the fluid metal, is undoubted. But the point to which we refer is this. The mean gravity of the earth, and the variation of its action from the pole to the equator, is known. The difference between the lengths of the pendulum vibrating seconds at the equator and at the pole is 2·38 French lines, or rather more than the two-hundredth part of the mean length. Slight local variations may be caused by the greater or less density of subjacent strata, but they are inconsiderable in proportion to that due to the spheroidal form of the planet. And the permanent and unvarying character of terrestrial gravity, measured by the length of the pendulum, is further proved (if need be), by the comparison of the rate of chronometers timed by pendulum, with those timed by springs.

How comes it to pass, then, that the weight of the atmosphere, as measured by the barometric column, varies to the extent of 10 per cent. and upwards? A movement of the quicksilver from 28·5 in. to 31·0 in., in the same locality, is within the limits of observation. A movement of ½ in. in a few hours,—indicating an increase or diminution of the force with which the atmosphere presses on the earth at that spot by one-sixtieth part, or more than 1¾ per cent.,—is far from uncommon. To the current answer to this question, that "the difference of pressure is due to the weight of vapour in the air," no reply is necessary; the less so because the mercurial column is generally highest in fine bright weather, and neither wet, fog, nor extraordinary heat, involving a corresponding degree of suspension of vapour, are directly indicated by the delicate balance.

The true explanation is, that for the pressure of the atmosphere on the earth, there is a cause other than a physical one,—a cause of that nature which, in default of better definition, we call electric, or magnetic. This cause we may speak of as the varying electro-magnetic attraction of the earth. In connexion with the import of this universally-observed phenomenon we may mention the abundance with which sparks are struck from flints on the road by the shoes of horses, by the nailed boots of rustics, or by an iron-shod staff, on the approach of rain.

A curious disturbance in the aërial perspective of distant objects, such as islands and promontories, giving the effect of a mushroom supported on a stem to the former, and of a projecting, overhanging nose to the latter, has been observed in the Baltic and in the Mediterranean, as preceding a storm by some thirty hours.

The habits of animals often afford sure prognostics of weather. Virgil mentions the activity of the ant before rain, a circumstance to which the numerous encampments of various species of ants in Italy call attention. The care of the spider in setting her gins, and the high or low flight of birds, have also been referred to as weather prognostics. The latter, however, often considerably varies in a very short period of time.

The only place in Europe inhabited by any of

the monkey tribe is the Rock of Gibraltar. The troops of Barbary apes that yet remain in that ancient haunt of their race are accustomed to change the side of the hill on which they congregate six hours before a change of wind. As this change is a matter of great importance to vessels striving to enter or to leave the Mediterranean, this prediction is eagerly watched for.

In Devonshire a habit similar to that of the Gibraltar apes has been observed in the roosting of pheasants.

Leaving, with this indication of the path in which we think further light may be collected, this portion of our subject, we wish to note that, according to the careful deductions of Lieutenant (now Admiral) Maury, the water which descends on the surface of Great Britain is evaporated, by the heat of the sun, from the equatorial ocean. In the pages of that interesting writer, the course of the clouds may be traced, till they shed down on our soil a rainfall varying from 24 in. to 80 in. in depth in the course of a year. The evaporation which supplies the rain for the temperate zone is calculated to be not less than 36 ft. depth of water per annum. At Calcutta an evaporation of 15 ft. has been measured. At a latitude of between 10 deg. and 20 deg., in the Bay of Bengal, an inch is said to be evaporated daily. On the Khasia mountains, in Bengal, the flood that is wrung out from the passing clouds, as from a sponge, is said to furnish the enormous depth of 600 in., or more than 8 fathoms of water. The rapid floods that fill the Atbara, and bring wealth to Egypt, have a similar origin.

On the fifty-seven millions of statute acres of Great Britain, if we take the average rainfall at 36 in. in the year, there descend in that time two hundred thousand millions of metric tons of water. This is what nature affords us on the average. The season must be altogether unusual that does not provide us with a third of that unimaginable quantity. What do we do with it?

The answer is very simple. We get rid of it as fast as possible. In the first place, every house, with the exception of those thatched cottages that are rapidly disappearing from the face of the country, has a special provision for collecting rainfall, and not for storing it for use, but for turning it, in the shortest and most ignominious way, into the nearest river. Instead of collecting it for the service of the farmer, or even of turning it, as used to be the case in many a country town and village, through a bright open course, where it babbles as it runs along, and from which lead off many a grip and sough to gladden the adjoining fields, we get it underground as rapidly as we can, and there so deal with it that first it dilutes our valuable sewage to an extent which renders it both worthless and unmanageable, and then it goes on to poison our rivers, to kill the fish, and to spread the germs of disease through the country. That is what we do with our rainfall.

Every drop of water that we use in England (except salt-water baths) comes direct from heaven. Nature has given us certain reservoirs, of which we make use without observing their extent, or taking any of the steps which would so well repay the cost proper for providing auxiliary storage. On every porous soil, of sandy or gravelly nature, the rainfall penetrates till it is arrested by the first impervious stratum lying below. On this bed the water accumulates. If the clay forms a basin, the water forms a subterranean lake. It accumulates till the basin is full; then it runs off at the lowest places on the rim. These escapes are what we call springs. They often occur not far from the summit of a hill. Climb Skiddaw, or ascend Stanmore-hill. In each instance you will find the summit dry. It consists of a light, porous soil. A little way down either highland, however, you find bog, or wet clay, or out-soak of some nature. Why is the ground at once so damp and so elevated? Simply because the rain collected over the whole top of the hill there runs over the edge of the clay which keeps it back. In chalk the case is somewhat different. Water seems to pass through chalk in a broken subterranean river, the level of the underground stream dipping rapidly as it approaches the natural outfall. The principle is the same as in more perfectly porous soils, but that modified form of gravitation which we call capillary, or possibly chemical affinities not distinctly understood, affect the level of springs in the chalk.

To our habitual waste of the gift of heaven, that careless stupidity which allows the rain to fall where it will, and takes no heed for the drought of to-morrow, we have one exception. We practise, where it can be done without expense, the most barbarous mode of irrigation yet known in the world. We know that for the support of vegetation we require an intermittent supply of water. Roots may be drowned, no less easily than fish may be drowned, by the improper supply of that element on which their life depends. We know by the world-old experience of Egypt that even the intermission which takes the form of a flood, and covers the face of the soil with a rich transported mud, has a wonderfully fertilising power. We also know that semi-aquatic plants—reeds, rushes, bog-beans, and water soldiers—that grow in permanently wet, marshy situations, are useless to the farmer. With this knowledge in our possession we irrigate thus. Through a valley, which with a little aid from the engineer might be made a very garden of Eden, we lead the rain, or rather let it lead itself, in parallel channels. We bar any efficient draining by water-mills and weirs; we occupy from a fifth upwards of the whole area of the valley with water-channels. We sometimes put down a wooden sluice or two, and we keep the whole soil, while grass ought to be freely growing, in a perpetual sop. As we do not cover all the ground with water we obtain abundant crops from about half the acreage; flags, reeds, coarse rushy grass, and water-courses, occupy the remainder.

Unirrigated England presents a noble field for the beneficial activity of the engineer. What we have already done in the way of deep draining, and of steam ploughing, is enough to teach us how much more may thus be effected. But to these important parts of farm engineering should be added a comprehensive and adequate system of dealing with our abundant rainfall. Lakes and reservoirs, open or subterranean, where available, fair channels for the conduct of the surface water, and for its distribution wherever gravity would allow, steam power for the service of those districts where it might be requisite, or at all events that use of the windmill to which, in our fen districts, we have recourse for getting rid of superfluous water, should be applied to raising supplies for irrigation. If this were combined with proper arrangements for watering, and not drowning the land; for the intermittent supply of the precious element, and for its reception unsullied by ill use, into rivers abounding in fish—we should add a money value to a large portion of our twelve million acres of permanent pasture, to say nothing of our sixteen million acres under cereals, green crops, and artificial grasses, that would be equal to the present fee simple.

The individual farmer in England may be hindered by a thousand obstacles from either perfectly irrigating or properly draining his land. But let us look a little wider than individuals; let us look at districts of country, grouped according to water-sheds and water-courses. Considering the rainfall on which we can with certainty calculate, it is the fault of the owners and farmers of each such district if they suffer long from drought.

ARCHITECTURAL DRAWINGS.

Our object under the present heading is not, we hasten to inform the sensitive professional reader, *infandum renovare dolorem*, to renew at the present instant the irritating questions concerning the legal ownership and value of architectural drawings, recently so much debated, and still, in a sense, devoid of a satisfactory and definitive settlement. But the debate on that ground suggests also some consideration as to the architectural value of drawings as a medium in carrying out a building, the extent to which they are or may be used or abused, the degree of importance to be attached to them, and the amount of time and trouble which may be reasonably bestowed on them; considerations which are not without their bearing upon the everyday routine of professional practice, in regard to matters wherein we are all too liable to run in a groove, without sufficiently estimating the practical value of some of the work on which much time and Indian ink are consumed in many hundreds of offices.

In the columns of the *Daily Jupiter*, as we know, it hath been duly laid down that an architectural drawing or design is a thing of nought; that the design only can be said to exist when bricks or stones have been superimposed, and drawing is superseded by the result which it only foreshadowed in a partial and (to amateurs) incomprehensible manner. Nor are there wanting professedly architectural critics who openly avow a somewhat similar heresy. We are told that the builders of our cathedrals needed not drawings; they were always on the spot, architect and mason being then one and indivisible, and the materials evidently fell together as naturally as possible, without any drawing or measuring beforehand; we have even an instance of a modern architect (not English) pointed out as the nearest modern approach to the excellence of the Mediæval builders, on the strength of the fact that he could neither write nor draw, and nevertheless did in some way contrive and build a domed church for his native town. Modern practice is usually in very much the opposite direction. Drawing is the first thing the architectural student learns, and for a length of time, in many cases at least, the only thing he learns. And with the majority of architects, excepting those whose name and fame have brought them into the position of consulting architects rather than ordinary practitioners, the greater part of the working time is spent over a drawing-board and T-square, personally and by proxy; and every detail appears on paper in its proper place before it is carried out in the actual building.

We might say that the *juste milieu* lay between these two extremes, did we believe that the former, the supposed Mediæval habit of building by the rule of thumb without any drawings at all, had ever existed, at least in connexion with anything worth calling architecture. The discovery of the Cologne Cathedral drawing, and several others, indeed, should have been a finishing stroke for this theory. But putting this aside, is it in any way conceivable that such Masonic problems as were involved in the building of a Gothic vault upon Gothic piers, the proper curving and mitring of the moulded voussoirs, and the placing a group of arch mouldings in correct and artistic relation to the pier sections beneath, could have been accomplished without a great deal of careful "setting out" first, by some descriptive medium or other? Are we to suppose, again, that the builders, or "architect" (may we say?), of the Lincoln presbytery, when permission was obtained to break through the city wall in order to carry out the design, had really not laid down first, in some manner, the proportions and dimensions of that splendid piece of work? or that the plan of a large cathedral or conventual establishment could be properly arranged, and the respective buildings proportioned to one another, without some degree of drawing being undertaken first, that at least men might have *some* notion of what they were going to build? We say nothing as to the manner and material of the delineation; the Mediæval architects may not have employed "architectural colourists," at fancy prices, or kept a "rapid perspective hand" in regular employ; but that such buildings came not but by much previous thought and consideration, not to be carried on without some sort of outward symbols and figurations, is contrary to all analogy and common sense. On the other hand, it can hardly be questioned that modern architectural practice takes too much the form of mere drawing-board exercise, and that many details are designed at the office desk, and never afterwards seen by the architect until finally completed and fixed, which would probably have been carried out with much better results had they been invented, and modified when necessary, by the architect at the building, with the position before his eyes, and worked out under his direction, with only so much of rough sketching as would suffice to render his idea intelligible to the workman.

For with regard to all architectural design it should be borne in mind that the drawing is, after all, merely the means of conveying to the craftsman the idea of the architect. This has been so far overlooked, that architectural draughtsmanship has arrived at the importance of a separate calling; we can scarcely call it an art, but rather a handicraft, for it may, with certain limitations, be successfully practised, and even carried to a high degree of elaboration, by persons possessing little education or feeling for architecture as an art. The draughtsmen (and their name is legion) are likely to be rather shocked at any view of the subject whereby this their craft is in danger to be set at nought; nor do we wish unduly to disparage the efforts of a very hard-working and not over-paid body of men, or to say that there is no real value to be

placed on their work. On the contrary, there is something extremely pleasing and satisfactory in the aspect of a well-finished and clear architectural drawing, with its hard firm lines, and carefully-touched conventional shadows, everything subordinated to the main object of showing the architectural detail clearly, but with sparkle and effect. There are certain cases in which it is desirable that this should be well done, as well as possible; in an exhibition of architectural designs, for instance, when the aspect of a number of rough or slovenly drawings would be disagreeable to the eye, as well as an obstacle to the ready study of the various designs; and there is something in the sight of a drawing executed with care merely for its own sake, which is, in a way, pleasant and satisfactory. But in ordinary architectural practice this sort of thing may be, and constantly is, carried too far, both as to the degree of finish bestowed on drawings, and the amount of drawing considered necessary in order to carry out a building. While neatness is always desirable, it may be said that no greater waste of time can be made than in elaborating flourishing titles, scales, &c., to ordinary working drawings. Then with regard to the drawings themselves, an absurd amount of labour is often bestowed, in proportion to what is really necessary. There are offices where it is a regular habit to get up ordinary elevations and details with the most elaborate pen and ink shading, executed painfully with the aid of a ruler; a process which is not only an absurd waste of time, but injuriously fatiguing to all but very strong sight. We have seen such a ridiculous piece of affectation as the production by an architect, on exhibiting the elevations of a building, of a large magnifying lens (such as are often in use in picture galleries), that the spectator might be rendered properly alive to the minuteness of the drawing. Drawings which have to be looked at in this way will commonly be found to be merely drawings, and nothing else; for the time that should be taken up in *designing*, in the proper sense of the word, is here given to merely mechanical work; the means put before the end. Then, again, as to the extent of drawing required for carrying out a building, a great diversity of opinion and practice prevails. Giving too little drawing is certainly a mistake, and perhaps the worse mistake of the two, with regard to plans and practical details; puzzling to the builder and workman, and embarrassing to the quantity-taker, who has to apply to the architect constantly for further and clearer information. Some architects, on the other hand, have made a practice of exhibiting in their several working drawings all the joiners' details, such as skirtings, architraves, stair balusters, &c., on a minute scale,—a double waste of time, as these things, if the architect take them into his hands completely, must be detailed afterwards a larger size; and in every building these parts of the work are liable to all kinds of modifications from unforeseen causes. It is useless, too, to hamper a workman with drawings of practical features that he must be perfectly *au fait* at if he knows his trade at all,—such things as window casings, shutter-boxes, &c. Unless there be any unusual contrivance to be explained, a joiner may be trusted with these, or he is not fit to be trusted with anything, and had better not be employed. Where ornamental details are to be given full size, it is unnecessary labour to show them minutely on the general drawing, especially as such points ought always to receive careful special consideration as the building proceeds; and with regard to ornament, again, it may be observed that, when really clever art-workmen are employed, a sketch giving the architect's general idea will often serve their purpose and his better than a finished drawing which ties the carver down to minute detail, and leaves no room for freedom of treatment and execution on his part. It is with regard, indeed, to the detail of a building that the greatest misuse of architectural drawing is made, as we have already hinted. Where it is possible, the presence of the architect on the spot, and the trial of the effect of ornament *in situ* by rough models or chalk sketches, might often do more to put life into the design, and preserve the best proportions and relation of size in detail, than any amount of detail drawing carefully made up at the desk would accomplish; indeed, in regard to the size of parts, the most experienced eye may often be deceived on paper, and ornament which looked very well in a drawing may turn out, when carved, in its position in the building, to be too large and coarse for refinement, or too small for effect, to a degree not at all suspected previously. Besides this, the effect of sunshine and shadow is sometimes so different from what is conceived as the result when designing the ornament; and especially in the case of a small feature often repeated, some peculiar turn, so to speak, of shadow, may give an effect quite remote from what was imagined and intended. When, owing to distance, frequent visits to a building are impossible, one of the safest ways of studying and working out the details is to draw out an outline of the elevation to a tolerably large scale (½ in., or thereabouts, according to circumstances), sketch the various details full size, then reduce them carefully by scale, and draw them in pencil on the test-elevation; by this means their proportion to each other and to the whole design can be observed and modified where necessary. This method, which is a really intelligent use of architectural drawing, was constantly employed by a late celebrated architect; and though "5 per cent." will not pay for working out a design in this way, the architect may get some return for it in his future reputation.

As to method and manner of getting up architects' drawings, there have been, we need not say, a variety of fashions, sometimes rather absurd. There was the old style of fine outline drawing, in which our fathers excelled; now completely disused, and which had the disadvantage of being so very conventional in manner and effect as to convey, less than any other style, any notion of the real aspect of the proposed building to the eyes of a client. Those were the days, too, when the picturesque of masonry or brickwork was a thing ignored, and elevations were drawn as if they were intended to be hewn out of a single block. With all this there were merits: great decision and fineness of line, and very careful laying down of everything precisely to scale.* We have had a good many other styles since, the opposite extreme being what may be termed the "blotting-paper" style (chiefly indulged in by architects of the type of "John the son of Smith"), where the object is to be as rough and unintelligible as possible. Even where comparative neatness is practised, a habit of absurdly thick lines was introduced some time since, and is still adhered to a good deal; in some plans drawn in this style it is impossible properly to apply measurement by scale, for a wall may be 9 in. or 14 in. according as the inside or outside of the defining "lines" are measured to. A line, according to Euclid, is "length without breadth;" a definition which draughtsmen should remember. Oddly enough, the same school of architects who brought the system of thick and coarse lines into vogue, and even some of the same individuals, have more recently taken up an opposite habit, and are practising remarkably fine and laborious drawing. For practical purposes, the best style of drawing is that which employs strong and decisive, but not thick, lines. A workman or clerk of works likes to *see* a line, and not to have to strain his eyes over hair-like marks; moreover, very fine drawing is unsuitable for plans which have to be knocked about a good deal, and be fingered and pulled about by the "hard hand of labour." The old system of "dark lining," so far as plans are concerned, is now almost entirely abandoned. It only occasioned confusion as to sizes and measurements. Plans should always be figured, at all events in their principal dimensions. It saves a great deal of time in setting out work, and ensures accuracy. If architects who neglect this were to look at the kind of tool which a bricklayers' foreman complacently accepts as "a pair of dividers," and which he applies himself to scale a drawing by, they would not be surprised at little inaccuracies creeping in under this system. In drawings of carpentry, construction, &c., it is a good system to mark on the drawings the scantlings of the various pieces, and any information that can be put on a drawing as to the method of construction and material to be employed. This is a much shorter way than specifying, and has the additional advantage that the workman has only one paper to look at instead of two. Colour is much more employed in showing distinction of material than formerly, especially in plans, and is probably the best and simplest method of doing this; but it should not be over-done, especially in washes put over floors and walls for distinction of stone, brick, tiles, &c., which is sometimes done so coarsely, and in such glaring tints, as to threaten one with ophthalmia, and impair instead of helping the clearness of the drawing. In elevations an indication of the character of the masonry to be employed will never be omitted by a true architect; and a very good and characteristic effect can often be given to a drawing with little trouble, by a slight but well-judged indication of the jointing of the stones; but a feeling for the picturesque of masonry is curiously rare among draughtsmen, who sometimes employ a long time in doing laboriously and ineffectively what a few happy touches would have accomplished in one-fourth the time. In regard to perspective, it is a pity that the system of etching with ink, as recently exhibited, for instance, in various masterly drawings for the Law Courts and other buildings, is not more employed. It is a method of execution peculiarly suited to architectural subjects, while it does not impose on the architect the use of any other materials or instruments than such as he is always in the habit of using: he may thus often save the disproportionate expense which would be incurred for coloured perspective views, the first-class execution of which is almost an art of itself; and the etching, when done with real feeling, is in some respects a better means of representing the building, especially in the fact that the etcher has under his complete command the smallest points and incidents of shadow on the minutest features of his building. The power of "cooking" the aspect of a building is certainly much more limited in etching than in colouring, which may be one reason why it is less employed; but every system which tends to make the architect his own workman rather than the mere employer of the labour of others is so far to be recommended, if on no other grounds. But whether the object of a drawing be the practical information of the contractor, or the enlightenment of a committee, let it be borne in mind that the drawing is, after all, but a means to an end, and that, except in some special cases (as in exhibitions), it is not worth while to waste time over its elaboration, which might be better employed in work of more permanent value. We have spoken of drawings "rough or slovenly," but the two words are by no means convertible terms; and it is quite possible for a drawing to be in one sense roughly executed, and yet to fulfil all its practical objects, and produce a pleasing effect on the eye in addition.

* Of the minute directions sometimes given by the older architects of the Renaissance period in England an instance is furnished by the working drawings for the rebuilding of Lyme Hall, in Cheshire (the seat of the Legh family), about the close of the seventeenth century. The architect's front elevation, which with other drawings is preserved by the family, shows all the joints of the ashlar-work carefully divided out, and the length of each stone figured upon it.

THE TENURE OF LAND.

THE INSTITUTION OF SURVEYORS.

At the opening meeting on the 14th instant, the president, Mr. Richard Hall, made an address, which he mainly devoted to a full exposition of the Irish Land Act. At the close he said,—

"Throughout the Act, the tenant is most carefully protected, and, with the Ulster custom legalised, and his tenancy secured from disturbance, he, in fact, possesses, as it were, a joint interest in the property with his landlord. This cannot fail to exercise a considerable effect on the value of property, in addition to the revolution it must bring about in the relation between landlord and tenant. It is to be feared that the Act will provoke much litigation on the claims of tenants for improvements, which, after the lapse of time it will be difficult for the landlord to disprove, the presumption being in their favour.

Where the Ulster and other customs do not obtain, landlords will be likely to endeavour to avoid tenancies under 50l., in order that they may contract with their tenants to be relieved from the provisions of the measure. The clauses enabling the Government to advance money are very important, and may prove advantageous to the country by affording means for the reclamation of waste land; they will, however, encourage sales to tenants, and it is difficult at present to predict the effect which will be produced by the consequent subdivision of estates.

The consideration of this question almost naturally leads us to that of the relations of landlord and tenant in this country, a subject which would appear to be, at this juncture, pre-eminently worthy of discussion by the members of this Institution.

It is true that the excellent paper by Mr. Squarey, and the discussion that followed, have nearly exhausted that part of the subject relating to the cultivation of the soil; but the important question of the advantages or disadvantages of leases, and the principles to be adopted in dealing with what are termed permanent improvements, still remain to be considered.

A lease, no doubt, secures to the tenant the advantage of being able to lay out his capital and make the most of his farm, with the knowledge that he will have time to repay himself with interest. It, however, sometimes proves a clog even to him, and it hardly affords such a security to the landlord, in the event of his lessee failing to carry out its provisions in their integrity. I am somewhat inclined to prefer the principle of shorter tenancies, provided that the agreement is framed with a due regard to the interests of both landlord and tenant, and includes some system by which the latter may be compensated for outlay, the benefit of which he has not fully reaped. The important axiom laid down by Mr. Huskinson, in his remarks on Mr. Squarey's paper, should, however, be kept in view,—namely, that tangible and visible results only should be paid for. I was not surprised to learn from him that the average farming of Scotland, where leases almost universally prevail, hardly equals that of Lincolnshire, with its tenant-right custom.

The question as to what part, if any, of the outlay for permanent improvements should be incurred by the tenant, is also one which may be considered with advantage. In this term are included those improvements which tend to enhance the productiveness of the land and increase its value permanently, such as the erection of buildings, drainage, water supply and storage, fencing, road-making, and the reclamation of waste.

I am disposed to think that works of this character should fall entirely within the province of the landlord, and that the tenant should pay an extra rent rather than contribute the whole, or any part of their cost. The facilities for borrowing the necessary capital of which the landlord can avail himself, very considerably diminish the difficulties in his way; but we have occasionally to deal with owners who cannot, or will not, perform even works of necessity, and in cases of this kind the tenant must often bear expenses in self-defence.

The comparative advantages of large and small farms, is another branch of this subject which affords important matter for consideration. The practice of throwing farms together, and thus getting rid of small occupations, is increasing; and by diminishing the extent of building necessary for the occupation of the land is of considerable advantage to the landowner. Large holdings, tenanted by men of capital, encourage a high system of cultivation and afford ample scope for the use of steam-power, but have a tendency to lessen the amount of labour employed. This practice, however, would perhaps be of doubtful expediency for the general interest of the community, if small occupations could be maintained in their full productiveness. The difficulty experienced, is to be found in the want of the capital necessary to enable the small occupier to obtain the greatest possible return from the land, and at the same time preserve it in condition. If this and adequate skill were forthcoming, no doubt the general supply of produce would be increased.

ON EARLY WOOD-ENGRAVING IN CONNEXION WITH PLAYING-CARDS.

The recent publication of two very beautiful volumes, "The Arts in the Middle Ages," translated from the French of M. Paul Lacroix, and "The Wonders of Engraving," from the French of M. George Duplessis, has interested me greatly, by the information and observations they contain respecting the arts of typography and xylography, which have recently given rise to a fresh controversy conducted with too much of that acrimony which usually characterizes literary disputations. How strange that where the sole object is, or ought to be, the attainment of truth, the following it by different paths should cause so much irritation and acerbity!

Harking back nearly a hundred years, we find the *literati* of France, Germany, and England intent upon discovering the origin of printing. They settled it somehow or other, or they tired of the pursuit, and left any one who had wind and strength enough to outrun them to settle it himself after his own fancy. But who ever discovered the origin of anything? When he who has been accounted the wisest of men affirmed that there was nothing new under the sun, how is originality to be established? Were the Babylonians, the Egyptians, the Chinese ignorant of the arts of engraving and printing in some form or other? We know not,—may never know,—what they knew, or from whom they learned what they knew. But antiquaries are, generally speaking, no logicians. They ferret out a date or an assertion, and commence a discussion or found a theory upon it, without first ascertaining that the date is correct or the assertion trustworthy. They argue without "settling their premises," and wander away into the wilds of imagination, more like enthusiastic poets than matter-of-fact critical archæologists.

The point at issue, I take it, was and is how and at what precise time printing with movable type by means of a printing-press and with printer's ink was first invented in or introduced to Europe. The astonishment created by the appearance of the first books that issued from the press of Gutenberg and Fust; the narrow escape of the latter from the death of a sorcerer; and the visit of Nicholas Jenson to Mayence, by command of Louis XI. of France, in 1462, to investigate and report on the new method of producing books "without the aid of the pen," and to "carry off surreptitiously the invention, and introduce it into France," are undisputed matters of history. The mysterious law-suit at Strasbourg between the Dritzchen family and Gutenberg, in 1439; the deed of partnership between Gutenberg and Fust, in 1450; and the association of Peter Schœffer, or Scheiffer, in 1452, are, if these dates can at all be depended upon, collateral proofs that typography was for full twelve years struggling into birth, and reached perfection only in the early months of 1456, when the first great Bible was ready for sale, and copies disposed of as MSS. at very high prices. The secret evaporating, Fust and Schœffer, having previously dissolved partnership with Gutenberg, printed the "Psalmorum Codex," the earliest book bearing their names, and which fixed in a manner, for the first time, a date for the new art they had so much improved, the colophon announcing that the book was executed "without the help of the pen by an ingenious process in the year of our Lord 1457."

Such are the most important particulars collected by the latest writers on the subject of printing, and I have stated them in the briefest form, so as not to encumber us with details irrelevant to my purpose, which is simply, without any partizanship or assumption of authority in matters of art, to assist to the best of my ability in the detection of error and the development of truth. It has been the received opinion for nearly a century, that the engraving of playing-cards on wood preceded and suggested the block-books of the fifteenth century, which in their turn led to the invention of movable types. The "brief-malers," or card-painters of Germany, are said not only to have made and sold all sorts of playing-cards, but stamped and illuminated various images of saints; and M. Breitkopf, in his "Treatise on Engraving on Wood," supposes that the impressions of these saints preceded that of the playing-cards; but, at all events, to one or the other, we are told, succeeded subjects of sacred history, accompanied by explanations cut in wood, which was the origin of books printed with blocks of wood, and from this practice Gutenberg obtained his first idea of the typographical art. This very probable theory remained unquestioned till 1868, when the observations of Mr. Henry Holt, on the Fairford windows, at the annual congress of the British Archæological Association, at Cirencester, in illustration of which he produced a copy of the *Nuremberg Chronicle*, and specimens of early wood-engraving, led to his propounding a new hypothesis completely the reverse of the old one. Mr. Holt has asserted that printing with movable type preceded engraving on wood; that the block-books were cheap substitutes for the highly-priced productions of the printing-press; and boldly challenged the literary world to prove the existence of any block-book or wood-engraving in a national or private library previously to the middle of the fifteenth century.

After a careful inspection of the celebrated St. Christopher, in Earl Spencer's library at Althorp, he contends that the date 1423 is not that of the engraving, but of the legend beneath it, which had been copied by the engraver, and has reference to the jubilee year of the saint. That it has been printed by a press, and with printer's ink, and, what is more important, upon paper which exhibits the well-known watermark of the bull or heifer's head, with a flower issuant between the horns, which was used by Fust, and supposed to have been made for him. He has shown that the discovery of this supposed early engraving instigated the fabrication of several similar, which were stained with coffee, to give them the appearance of age; and more recently some have been found with still earlier dates, 1416 and 1406, the authenticity of which he is prepared to dispute as stubbornly as he has that of the celebrated St. Christopher. All this has naturally aroused a host of antagonists, who have more or less courteously contradicted without convincing him by the production of any incontrovertible fact which would refute the evidence he adduces in support of his arguments. Alone and undismayed, he still gallantly defies all comers. Hitherto it has been a war of opinion only. Mr. Holt has given his reasons for the faith that is in him, and puts the onus of proof very cleverly upon the shoulders of his opponents. There can be no dispute about the period when Gutenberg produced his Bible. What is required, then, is positive evidence of a wood-engraving or block-book of a date prior, let us say, to 1450. There are grave doubts at least, it must be admitted, about the long-vaunted St. Christopher, and there is nothing but the date attached to the legend to set against the suspicious features of it. There is nothing in the dress of the personage represented to assist the argument on one side or the other. It is simply conventional as regards the holy personages, and the two small figures of peasants present us with no article of clothing peculiar to any time previous to 1423. Even if they did, it would only mark the date of the original design, and not that of its execution on the wood; for there can be no doubt many of the sacred subjects cut by the formschneiders of the fifteenth century were copied from miniatures in the older illuminated MSS. fresco paintings on the walls of churches or other available sources. But how about the playing-cards? Did they originate the engravings of saints and the block-books, according to the old theory, or did they succeed them, as Breitkopf suggests, but yet precede the invention of typography? Upon this point alone I beg, in all humility, to offer a few remarks, strictly confining them to the subject of costume, a test which I have never known applied in vain when called to the assistance of the critical inquirer.

The mention by M. Menestrier of an entry in a book of accounts, of the time of Charles VI. of France, of a payment to a certain painter, named Jacquemin-Gringonneur, of fifty-six sols of Paris for three *jeux de cartes*, gilt and coloured, of various devices, to be delivered to the king for his amusement, gave rise to the belief that cards were invented at that period (1392), for the especial advantage of his melancholy majesty. The chronicle of Petit Jean de Saintre was subsequently cited to show that cards were known in the reign of Charles V., to whom Jean was a page; but Mr. Gough, in his paper on playing-cards, communicated to the Society of Antiquaries (*Archæologia*, vol. viii.), observes that the work itself is, at least, a hundred years later than the date of the presumed allusion, as Jean's epitaph in it is dated 1458, and, at all events, the mention of cards in a work of the latter half of the fifteenth century does not prove their existence in the fourteenth. A still earlier instance was adduced by a foreign antiquary, who quoted the statutes of the order of the Band, instituted by Alphonso XI., king of Castile, A.D. 1332; but Mr. Gough demolished this evidence as ruthlessly as he did the former, by showing that no mention of cards occurs in the original statutes, or any copies of them written or printed previously to the edition of Dr. Guterry's translation of them, published in 1558, at which time cards had become common throughout Europe.

It is unnecessary for me to enumerate all the confident assertions and the equally confident contradictions that are to be found in essays on this subject, from Dr. Stukely to the Rev. E. Taylor, from MM. Sainte Foix and Bellot to MM. Paul Lacroix and Duplessis. There is plenty of evidence to prove that cards drawn, painted, and gilded by the hand, like those of Jacquemin-Gringonneur, and to which the name has been given of "Tarot cards," found their way into Europe from the East in the fourteenth century, or perhaps earlier; but they had nothing

whatever in common with those to which we are accustomed, although they might have suggested them, and the fact in nowise affects the present question, which is one of printing by means of wood blocks only. The seventeen preserved in the Bibliothèque at Paris, supposed to be a portion of those painted by Gringonneur are now allowed to be of a much later date, but are very valuable, as they enable us to distinguish the Tarot cards from the playing-cards that succeeded them. There are no pips nor suits in them; no king, queen, or knave, as in the later packs. The subjects are emblematical, mythological, and scriptural; *cartes de fantaisie*, as M. Leber describes them. There are personifications of Justice, with her sword and scales; Cupids shooting at lovers; astronomers gazing at the moon; death on the pale horse; a pope, an emperor, knights, squires, fools, and the Day of Judgment!

That some game might be played with them is very probable. That they were used for fortune-telling, as our modern cards are, I have no doubt, and hence, probably, their prohibition in various countries; but, I repeat, however curious in themselves, they have no bearing on the point in dispute. Amongst the many official documents quoted to prove the earlier existence of *printed* playing-cards, one only calls for attention. It is a prohibitory order said to have been obtained by the master card-makers of Venice, in 1441, to prevent the importation of the large quantities of painted and *printed* cards, which were introduced into the city to the great detriment of their art. Before any argument is based upon this statement, we ought to be satisfied that the date given is strictly correct, and that verification can only be arrived at by a minute inspection of the original order in manuscript. But admitting for the moment that it is so. The word which has been translated "printed" is "stampide" (*"Carte e figure depinte e stampide"*), and the question arises as to the meaning of that word in 1441. "Stampere," according to Florio, signifies "to print, to presse, to stampe, to *form*, to *figure*," and "stampe," in like manner, besides a print or impression, is said to be "a *marke*, a *shape*, a *figure*." The word existed before printing in its modern sense had been heard of, and the natural application of it to the new art does not in the least determine the question of when that art was invented. Stampide, in 1441, might simply mean formed, figured, or shaped by the means of the stencil, a process which, we know, was adopted at that period, and which, being much more rapid than drawing and colouring entirely by hand, would doubtlessly affect very seriously the art of the card-illuminator similarly as photography at the present day has the art of the miniature-painter. For instance, we have seen that Gringonneur was paid for the cards drawn and painted for Charles VI. in 1302, fifty-six sous of Paris, which is calculated to be about 7*l.* 1*s.* 8*d.* of our present money, and a single pack of *tarots*, admirably painted about 1415, by Marziano, secretary to the Duke of Milan, cost the enormous sum of 1,500 golden crowns (about 625*l.*); but in 1454 (twenty-nine years later) a pack of cards intended for the Dauphin of France cost only five sous of Tours, about 11*s.* or 12*s.* M. Lacroix, to whom we are indebted for the collection of this information, observes, "In the interval between 1392 and 1454 means had been discovered of making playing-cards at a cheap rate, and of converting them into an object of trade;" but he does not seem to have noticed how these facts militate against the hypothesis he propounds only a few lines previously, where, speaking of a pack of cards which he refers to the reign of Charles VII. of France, he says, "They were probably executed between 1420 and 1440, that is to say, *prior to most of the known xylographic productions*. Playing-cards therefore served as a kind of introduction or prelude to printing from engraved blocks, an invention which *considerably preceded* the printing from movable characters" (page 137). Now as typography was undoubtedly invented before 1456, the date of the publication of the Mayence Bible, if printing from wooden blocks "considerably preceded" that art, and was itself suggested by the engraving and printing of playing-cards, which "served as a kind of introduction and prelude" (the old theory, in fact), we must certainly go back to very nearly the beginning of the fifteenth century for the first appearance of printed playing-cards, and give some credence to the story of Adrian Junius,—half believed by M. Lacroix himself—that both typography and xylography had been practised at Haarlem by Lawrence Coster as early as 1422. Let us see, therefore, if we can find any undoubtedly of that date. The same writer has just told us, only three lines higher on the same page, that "These cards, which bore all the characteristics of the reign of Charles VII., must be looked upon as *the first attempt* at wood-engraving and at printing by means of engraved blocks." From the costume which he describes (for unfortunately he has not given us an illustration of them), and the inspection of some engraved for Mr. Taylor, which may be the same, I should be willing to admit that they may be of the time of Charles VII., but certainly not earlier than the appearance of typography in 1456. Charles came to the throne in 1422 and died in 1461, and "the plumed flat cap" and other peculiarities, point clearly to the end, and not the beginning, of his reign; and if these are really to be considered "the first attempts at wood engraving," and a prelude to printing from wooden blocks, what becomes of the boasted discovery of M. Delaborde, of two prints dated 1406, or the story of Adrian Junius above mentioned? These cards, however, of which there are two packs, though still partaking of the *tarot* character in design, are the earliest specimens extant of the transition into the playing-cards of the following century. They present us with king, queen, and knave, and one of them with the well-known four suits, clubs, hearts, diamonds, and spades, the other displaying crescents instead of diamonds. The only engraved *tarot* cards at present known of, are Italian, invented, according to M. Lacroix, about 1460, and I should assign those of the time of Charles VII. to close upon that date. I have, in short, met with none that could safely be accounted earlier, judging by what I consider the infallible test of costume and armour, in conjunction with which must not be forgotten remarkable fashions of hair and beard. During the first half of the fifteenth century the hair was worn short and the face was closely shaven at the sides by all men, some retaining a moustache, with or without a forked beard; but the generality shaved entirely. After that date the hair gradually lengthened, and in the latter portion of it, from the reign of Louis XI. in France, and Edward IV. in England, covered the ears and finally fell upon the shoulders, the doublets being worn as low in the neck almost as the dress of the women. Where there may be some doubt about the costume these marks will frequently decide the question. Mr. Chatto (page 214) observes that "Conclusions drawn from the costume displayed on cards are not of much weight in the determination of a date, seeing that persons supposed to be well acquainted with the subject of costume have not been able to determine the date of any old drawing, even within fifty years;" and Mr. Taylor agrees with him that such speculations as regards dates "are very often fallacious, as any type, once become conventional, might continue in circulation for a considerable period, and this, too, in different countries" (page 115). To these remarks I answer that persons who could not determine on the date of a costume within fifty years would never have been supposed by me to be well acquainted with the subject; and that, though I quite agree with Mr. Taylor as to the perpetuation of an ancient type, I am surprised that he does not appear to see how that fact assists the new theory; as, supposing an engraving can be found displaying a costume undeniably of the fourteenth or even thirteenth century, the stickler for a later date would be justified in denouncing it as a copy of an older type, as in our present court cards we still find king, queen, and knave represented in the costume of Henry VII.; and it so happens that I can instance a case exactly in point. Amongst the many beautiful illustrations of his valuable volume, M. Lacroix has given copies of some engraved cards, one of which represents "a knight" in the civil costume of the close of the fourteenth century, the edges of his garments being curiously cut into the shape of leaves,—a fashion commented on by the chroniclers, and prohibited by sumptuary laws to persons of inferior degree. And yet it is acknowledged to be one of a set engraved by an artist only known as "the Master of 1466," and was, no doubt, copied by him from a "tarot" pack drawn and painted in the reign of Charles VI., very nearly a hundred years earlier. At the same time, it must be obvious that, though I might, if the card had not been engraved, have referred it to the period when so peculiar a fashion of dress prevailed, I should never have assigned it to a time when that fashion had not been invented. It consequently follows that cards presenting us with the costume of the latter half of the fifteenth century, although they might have been engraved much later, could not, by any possibility, have been manufactured earlier. With the exception of those by the Master of 1466, and a set of tarots called the Mantegna Cards, on one of which is the date 1483, all the specimens of printed playing-cards that I have met with display the unmistakable character of the fashions of Germany, France, and England during the latter half of the fifteenth century, and the greater portion those of the very latest part,—Louis XI., Charles VIII., of France; Edward IV. and Henry VII., of England; and Maximilian I., Emperor of Germany. The curious cards formerly in the possession of my old and kind friend, Mr. Francis Douce, some of which have been engraved by Mr. Ottley and Mr. Strut, are believed to have been the work of the famous Martin Schön, or Schongauer, who died in 1486, and his contemporary, Israel van Mechelm. The earliest representations of persons playing at cards that has yet been discovered is a miniature in a MS. French copy of St. Augustine's "Civitas Dei." It was engraved for Mr. Thos. Wright's "History of Domestic Manners and Sentiments," p. 223, and exhibits two ladies, with the steeple head-dresses of 1467, and a gentleman, with the small cap and long hair of the same period, playing at a round table, with cards, of which the pips are visible. The illustration on the opposite page, copied from a miniature in "the Roman du Roi Meliadus," British Museum, Add. 12,228, and stated to be of the fourteenth century, is of no authority, the original drawing not being contemporary with the MSS. (in which there is no mention of, or allusion to, cards), and one of the latest and worst of those drawn and left unfinished by very inferior artists. The pips discernible in the cards sufficiently indicate a date about coeval with the other "card-party," anterior to which I have as yet been unable to discover any printed playing-card.

I offer no opinion of my own; I simply state the result of such examinations as I have had time and opportunity to make of the statements, arguments, and evidence of others better qualified than myself to discuss the subject. It is one of so much importance, affecting, as it does, the history of art, that I believe it worthy of a calmer and more careful reconsideration than it has yet received. Mr. Holt may be mistaken,—his enthusiastic nature may have caused him to jump to conclusions too hastily; but ill-concealed contempt for his judgment, or violent denials of his assertions, are as idle as they are unworthy. Truth is great, and will prevail, and I would not do Mr. Holt so much injustice as to believe that he would not feel obliged to any one who could establish the fact, whether it was for him or against him. J. R. Planché.

GLASTONBURY.

Take a sheet of note-paper; draw down through the middle of it a line—you need not be so very particular about its being straight; one-third the distance from the bottom draw a line at about right angles, one-third the length of the first line; call the point of intersection the Market Cross, and call the line Magdalene-street; from the Market Cross to the bottom of the paper call the line Benedict-street; from the Market Cross on the *other* side of the first line draw another line, at about right angles, and call that North Load, a rather singular name, but never mind—"what's in a name?" Nearly at the top of the paper draw another line, at about right angles, and call that Chilkwell-street; and from that draw a line so as to intercept Magdalene-street, and call that Bere-lane; prolong the line, and call that Weary-all Hill; come back to the first line, where you commenced drawing Chilkwell-street, and draw a short line to the left: call that the Wells-road. Consider that Magdalene-street is, near the Market Cross, from 100 ft. to 200 ft. wide; Benedict-street (which is the road to the railway station) a dirty little lane, of 16 ft. or 17 ft.; High-street a well-favoured street, with good pavements on each side, and of a width from house to house of about 50 ft.; North Load the same width as St. Benedict-street, but still dirtier; Chilkwell-street, the Wells-road, Bere-lane, and Weary-all Hill of a width of perhaps from 20 ft. to 30 ft. Turn the paper so that the Market Cross may be north, and Magdalene-street south; give a gentle

inclination to the paper westwards; turn up the paper above Chilkwell-street, and consider that a hill; and consider Weary-all Hill a conical lump of dirt;—and you have a rough idea of Glastonbury, or Glastenbury, a town of 3,500 inhabitants, and filling an area of about 7,100 acres, in the county of Somerset.

Four or five years ago, this town had an awful visitation of cholera; in a short time there were seventeen or eighteen deaths. Last July some sporadic cases of scarlatina appeared; in August it became an epidemic, and in fifty days there were fifty deaths, about forty of which were from scarlatina. It was confined to a street or two at first; at last it spread all over the place like seed coming from a thistle-top. How came such anguish,—the anguish of death,—upon so many in such a terribly short time? How came such trouble on the town? It is well situated, it is warm, has a fair supply of water, and its streets, if dirty, are on the whole above the average width. If a farmer had a field well situated, and he allowed its crops to be stifled and destroyed for want of drainage; and he allowed dirty corners in his field, full of thistles, that would blow about, and scatter their seed in every direction, would he be be considered a good farmer? No. Then it is just that at Glastonbury: the people are destroyed like badly-managed crops, simply for want of good farming. First as to sewers. The only street in Glastonbury that can be considered properly sewered is High-street; the other streets have all sorts and sizes of drains to depend on; they run here and there, lose themselves, and get choked, how, where, when, no one seems to know; yet no town could be drained much more easily or more effectually. Let the streets be drained on a system, with pipes, and conduct the sewage, which could be easily done by means of gravitation, not into open ditches, and a horrible cesspool, but upon land, and use it for irrigation. There would soon be a generous return in health, in comfort, ay, and even in money, if the irrigation were managed properly; and towards that end we recommend the authorities to study, for it is well worth study, "Practical Suggestions, by Robert Rawlinson, C.B, in reference to Sewerage, Drainage, and Water Supply of Lunatic Asylums issued by the Commissioners in Lunacy."

The greater part of the sewage now empties itself in open ditches in Paradise Fields! (fine ironical talents the owners must have had to give the place such a name!), and it finds its way to a cesspool not far from the railway station.

The cesspool, or reservoir of poison, is more than a quarter of a mile from the Market Cross, yet we were told the smell from it and from the ditches could be easily discovered in the town, when the wind was in a westerly direction—and westerly winds are the prevailing winds at Glastonbury.

The houses of the poorer inhabitants are characterised by a want of back premises; it is no uncommon thing for the *garde-robe* to be under the same roof as the dwelling. In the pit are stored all garbage and refuse until it is full; then, and not until then, it is cleared out. We saw a pit being cleared out in Chilkwell-street; it was immediately outside the back door, and against the wall of the dwelling-house (there *was* a back door in this case). The pit would hold about three loads of stuff, and the smell, the appearance of the stuff, and the appearance of the pit were horrible. Fancy this horrid pit being gradually filled up, matter added to decomposing matter, to decompose day after day, week after week; and we presume this is not an unusual instance. Is it any wonder that Nature rebels so fiercely, and sends sickness, with its accompaniments of wretchedness and woe? Then washing-water is flung into the gutters outside these houses, making the town look still more dirty, and adding to the offensive smell. Take two or three of these houses, fill them as full as they can be of human beings, and put them all upon a short allowance of water, and you have the worst thistle-bed in Glastonbury.

If they were determined to have disease in Glastonbury, no matter at what price, they could not do much more towards effecting their determination, if they suffer such places to exist. The water-supply does not seem perfect; but that we will not now enter upon, for we have pointed out in all kindness the chief sources of the presence of zymotic disease in Glastonbury. We hope what we have said will be taken in the kindly spirit in which it is offered. PRO.

WORDS ON THE DRAINAGE OF LIVERPOOL.

THERE are many people who unquestionably believe that the converse of every proposition has equal claims to truth with the original. They place implicit reliance in the *vice versâ* statement, and consider it to be applicable in every instance, and a rule without a single exception. It is not to be wondered at therefore, having regard to the extensive scope of this mistaken credulity, that we continually witness practical illustrations of the false motto, "Never do to-day what you can put off till to-morrow." There is a fatal charm in procrastination, an enticement in delay, and a soothing pleasure in indecision, from which the wisest of us are in no ways exempt. Nine men out of ten experience the greatest difficulty in "making up their mind," and it is unnecessary to enlarge upon the enhancement of the difficulty, when it is kept in view that nine men out of ten must "make up their mind" before any measure involving any public or national benefits can be conferred upon the community at large. Our local boards and corporate authorities are, in general, exceedingly prone to yield to this mischievous species of fascination. They find it impossible to decide, not in a hasty, but in an expeditious, manner upon any proposal which is brought under their consideration. They display an amount of ability in disputing upon quibbles which would confound a Lord Chancellor; they require evidence sufficiently tangible and positive to convince an idiot, and, under the guise of asking questions, they propound riddles and conundrums that would puzzle the Sphinx herself. Instead of foreseeing that sooner or later compulsion will succeed to option, and necessity supersede expediency, they continue to let matters take their course, and refuse with a persistency that is invincible, to what our French neighbours call, "accept the situation." Thus it is that sanitary and other measures of the greatest importance are postponed from time to time, only to become eventually the more onerous and the more imperative. Adjournment follows adjournment until the process partakes of the nature of a *sine die* arrangement, and those who ought in the interests of their own welfare and that of others to be readily influenced by the *suaviter in modo*, can only be brought to a sense of their duty by a vigorous administration of the *fortiter in re*. There is no other reason to which can be assigned the fact, that so very few of our towns have adopted proper systems of drainage and sewerage,—systems which science, morality, and hygiene have long since demonstrated in the clearest manner, to be an indispensable feature of civilisation. Our towns, both large and small, with a few solitary exceptions, adhere to the old routine, and continue, as the population increases, to pollute with commensurate augmentation the earth, the air, and the water.

The practice of discharging the whole contents of the drains and sewers into the nearest river or stream is so prevalent, that innumerable instances might be adduced where it now exists, and has existed from time immemorial. Among cities of considerable size and national importance, in which this practice still continues, Liverpool may be quoted. The Mersey, which bears upon its waters the merchandise of the world, is the common sewer of the city. All the main drainage running from the western side discharge their contents into the river, either directly or indirectly. There is no doubt but that a stream of the volume and capacity of the Mersey, to use a common phrase, can "stand" an amount of pollution that would reduce one of smaller dimensions to the same state that the Irwell is in. But there are limits to the quantity of poison that rivers, as well as human beings, can take with impunity. The experience acquired from the management of the London sewage, and its effect upon the Thames, have taught us thus much. Similarly to the metropolis, the suburban part of Liverpool, especially the rising borough of Bootle, is increasing rapidly in population, and its drainage and sewerage becomes a formidable addition to that of the parent city. Independently of the fact that before long legislation will step in and forbid, under any circumstances the discharge of sewage or refuse-matter into rivers, the cause we have just alluded to, would of itself suffice to render it necessary to provide for the disposal of the sewage otherwise than by allowing it to flow into the Mersey. It must not be forgotten that nuisances exist quite as much, if not more, in degree than in kind, and that extreme dilution will nullify the effects of the deadliest poisons. Assuming, therefore, as may be reasonably done, that it is a mere question of time, whatever may be the actual cause, regarding the present disposal of the Liverpool drainage and sewerage, the question that presents itself is, what means are to be adopted to ensure another outlet for it when the present one is permanently closed? One result will be, that in future, instead of so valuable a commodity being wasted, it will be utilised in some manner or other. Whether it will be utilised to its maximum or not depends upon the system adopted; but any scheme of utilisation, no matter how crude and imperfect, is preferable to the suicidal policy of discharging so rich a manure into unproductive waters. That we ought to utilise our sewage—that is, get so much manurial value out of it—is as recognised a maxim among professional and scientific men, as that we should get so much work out of a horse, or so much steam out of coal. If the Liverpool authorities determine upon irrigation as their principle of utilisation, they must, in the first instance, provide for that indispensable adjunct to this method—so much land. It is not necessary that the whole of the land to be acquired should be in one and the same locality. On the contrary, it would be better to have several sewage farms, so that the drainage of the different districts might be accommodated separately. This is particularly desirable in a city similar to Liverpool, in which there is a high level and a low level system of drains; for some of the land could thus be supplied with sewage on the principle of gravitation, while the remaining less accessible portions could be appropriated to the utilisation of the sewage that it might be necessary to raise by pumping.

It may lift all, or nearly all, its sewage into one main sewer, and discharge it over a large tract of sandy ground, or it may deal with it separately, as may prove best upon a mature consideration of the whole question, which will undoubtedly, before long, have to be grappled with in a considerably more extensive and energetic manner than the authorities have yet displayed. Some attempt has been made to utilise the sewage of Liverpool on a farm of about forty-five acres; but the results have not been satisfactory, and do not bear out those which have been obtained elsewhere. This is not to be wondered at, when the difference of conditions attending the case is taken into account. So long as the drainage and sewage of Liverpool is permitted to flow into the river, so long will that ready and cheap outlet be made available for the purpose. Any trifling irrigation that may be carried on in the meantime can only be looked at in the light of an experiment, and, moreover, an experiment not particularly well carried out. But once let a veto be put upon the present system, let the great Mersey drain be closed, and we shall witness a very different state of affairs. The authorities will be then compelled to regard the matter *au sérieux*, and after the usual amount of delay, indecision, and negotiation, will set vigorously to work to solve the question on a more extensive scale than has been yet attempted.

RESTORATION OF WINDSOR PARISH CHURCH.

THIS work has been completed, and the church opened. What is done is only a portion of an extended scheme involving an estimated expenditure of 8,000*l*. The portion of the work now carried out consists only of the erection of the chancel, organ-chamber, and Royal pew, the re-seating of the floor of the church, the removal of the organ, the alterations of the windows, and the reconstruction of the western gallery. The addition to the east end of the church is in the Perpendicular style, and is built of stone from Wycombe, with Bath stone dressings, the interior facings being of Corsham stone, with blue Corsham and red Mansfield bands. The east end of the chancel has five sides, in each of which there is a two-light window, one of the windows being filled in with stained glass, presented by the vicar as a memorial to the late Mrs. Ellison. The subject represented is that of visiting the sick. The window is by Heaton, Butler, & Bayne. The reredos takes up the whole of the five sides, one side behind the communion-table being filled in with mosaics by Salviati. The panels of the reredos are separated by twisted columns at each angle, the capitals being carved and surmounted with angels in the posture of adoration. The Royal pew is situated on the south side of the chancel, and opens by arches into it, and also into the

south aisle. It is lighted by two two-light windows, and one circular window over them. There is an entrance to the Royal pew and the chancel from the back of the church.

The chancel opens into the nave by a moulded four-centered arch, 22 ft. wide, 18 ft. to the springing points, and 11 ft. to the crown. Over the organ and royal pew arches there are three clearstory windows. The roof is open, of Dantzic fir, and rests upon crockets, on which are carved angels with musical instruments. The floor of the church has been entirely re-seated. The pews have been abolished, and low open seats of deal, stained and varnished, substituted. In the ends are carved panels of quatrefoil tracery. The church is lighted by a series of coronæ, suspended from the roof in the centre of the arcade arches, by smaller lights under the galleries, and by a larger corona in the chancel. The lighting has been performed by Messrs. Hart, Son, Peard, & Co., London. The decorations are by Messrs. Heaton & Co., London. The heating of the church by hot-water apparatus was entrusted to Messrs. Wellman, of Windsor.

The organ, which formerly stood in the western gallery, is now placed in the chamber on the north side of the chancel.

The contract for these works was taken by Mr. Kelly, for 4,168*l.*; but, from a statement made by the vicar, the estimated expenditure, exclusive of printing and advertising, amounts to 5,814*l.* The designs upon which the work was carried out were by Mr. S. S. Teulon, architect; and they have been superintended, on the part of the architect, by Mr. T. A. Cressy, as clerk of the works.

At the luncheon which took place after the opening, Mr. John Walter, M.P., in the course of an interesting address, complimented the architect on what had been done.

THE COFFERDAMS FOR THE THAMES EMBANKMENT.

INSTITUTION OF CIVIL ENGINEERS.

At the first meeting of the session, November 8th, Mr. C. B. Vignoles, president, in the chair, the paper read and discussed was, "Description of the Cofferdams used in the execution of No. 2 Contract of the Thames Embankment," by Mr. Thomas Dawson Ridley.

The contract upon which these cofferdams were used was let by the Metropolitan Board of Works, in January, 1864, to Mr. A. W. Ritson. It extended from the landing-pier at Waterloo Bridge to the eastern end of the Temple-gardens, a length of 1,970 feet. Mr. J. W. Bazalgette was the engineer-in-chief, and Mr. Edmund Cooper was the resident engineer; the author having charge of the works for the contractor. The breadth reclaimed from the river by this portion of the Embankment varied from 110 ft. to 270 ft.; the depth of water, when the tide was low, in front of the wall, averaged 2 ft., and the rise of tide was 18 ft. 6 in. The borings showed the bed of the river to consist of sand and gravel, resting upon the London clay, at depths varying from 21·58 ft. to 27·10 ft. under low-water mark, whilst the foundation of the wall was in all cases designed to be carried down to a depth of 14 ft. under low-water mark.

It devolved upon the contractor to design dams to the satisfaction of the engineer, who reserved to himself the power to adopt either caissons or cofferdams. The author considered that dams of timber and puddle would not only be cheaper, but could also be more expeditiously constructed, than iron caissons; and having succeeded in obtaining the engineer's sanction to one of the plans which he submitted, the work was begun.

The Temple Pier was the most important work in the contract, and it was therefore requisite to lay its foundation dry as soon as possible. To effect this, two short dams, one at each end of the pier, completely enclosing a short length of the river wall, were first begun. No. 1 was 111 ft. 6 in. long by 25 ft. broad, inside measure, and No. 2 was of similar breadth, but a few feet longer. These dams consisted of two rows of piles of whole timbers, averaging 13 in. square, with a clear space of 6 ft. for puddle. The piles were from 40 ft. to 48 ft. in length, having cast-iron shoes 70 lb. in weight, and were driven 4 ft. into the clay. Cast iron was used in preference to wrought iron for the shoes, as giving, at an equal cost, a much larger base for the timber to rest upon. Where the driving was difficult, shoes having cast-iron bases and wrought-iron straps were employed. The piles were secured by three rows of walings of whole timbers, 13 in. to 14 in. square, through which, and passing through the puddle space, at distances of 6 ft. 6 in. horizontally, were bolts 2¼ in. in diameter in the lower waling and 2 in. in diameter in the middle and upper walings. Cast-iron washers, 9 in. in diameter and 2¾ in. thick, were used to distribute the pressure over a large surface of the walings. To avoid the difficulty of having to procure a number of long timbers, the piles were in a few cases only of the full length required, and the others, after being driven, had lengthening pieces fixed to them, so as to raise the dam to a height of 4 ft. above the high-water line. Before proceeding with the construction of these two dams the ground was not dredged, but in all the dams subsequently constructed, the sand and gravel were cleared off to the level of the clay before the piles were driven. Where the ground had not been dredged, great difficulty was experienced in driving the piles, and in the two dams in question one-sixth of the whole number pitched, having shown symptoms of failure, were drawn. In all cases the piles so drawn were observed to have cast their shoes, and their lower extremities were usually bruised into a mass of tangled shreds. The failure generally occurred when the piles were passing through a bed of compact sand, resting upon coarse open gravel. Beneath the gravel, and resting upon the clay, was a layer of septaria, which offered a serious impediment to the passage of the piles; but when once the clay was reached, the driving was comparatively easy. The space between the piles was dredged to the level of the clay, and filled with well-tempered puddle. The transverse struts, of which there was a tier to each waling, were of whole timbers, 8 ft. apart in the length of the dam.

Simultaneously with the construction of these dams, the filling-in of the space behind the Temple Pier was going on, the line of the dam was being dredged, and the driving of the piles begun. The Temple Pier, 470 ft. in length, was irregular in outline, projecting in some parts upwards of 30 ft. in advance of the river wall, and the breadth across the foundation trench in the centre part was 57 ft. To avoid the necessity of having to use a large number of struts of such great length, this dam was strengthened by means of buttresses of piles, somewhat similar to those used in the cofferdams constructed for the Grimsby Docks. (*Vide* Min. of Proc. Inst. C.E., vol. ix., p. 1.) These buttresses were placed at intervals of 20 ft., and were backed up by struts extending across the foundation of the pier. The scantlings of the timbers and the sizes of the bolts in this dam were similar to those in dams Nos. 1 and 2, the walings only being a little stouter, averaging 14 in. square.

In cofferdams there was usually a frequent settlement of the puddle, producing channels underneath the bolts and a consequent leakage. In such cases holes were bored, with a 3-in. auger, through the inner row of piles, immediately below the tie-bolts, and pellets of clay were driven through these into the puddle until the leakage was subdued.

The quantities of material used in the dams were:—In the Temple Pier dam, timber 152 cubic feet, iron 285 lb., and puddle 9 cubic yards per lineal foot of dam. In the other dams, timber 117 cubic feet, iron 202 lb., and puddle 9 cubic yards per lineal foot of dam. The staging from which the dredging was executed, and the piles driven, consumed 19 6 cubic feet of timber, and 13 lb. of iron per lineal foot. Sissons' and White's steam pile-drivers, and those of Appleby Brothers, were used in addition to others wrought by manual labour. The cost of driving was a little under 4d. per foot of the pile when the ground was dredged, but was much higher where the ground was not dredged. The preparation of the piles cost seven-eighths of a penny, and the fixing of the walings and shoring 4½d. per cubic foot, exclusive of the cost of fixing the tie-bolts.

In estimating the pressure to be resisted, and the requisite strength of the dam, the depth of water was taken at 22 ft., the piles were assumed to be 12 in. square, and the struts 13 in. square. The weight of a cubic foot of the dam was estimated to be 100 lb., and the breaking strain of the timber, measured by a load upon the middle of a bar 1 ft. long and 1 in. square, was taken at 400 lb. The pressure of the water was found to be 15,125 lb., or 6·752 tons per lineal foot of dam. The momentum of the water tending to overthrow the dam was 110,916, whilst the momentum of the dam itself was 83,200. It also appeared that if the dam had been 9·23 ft. instead of 8 ft. in thickness, it would, considered as a wall, have been, in relation to the pressure of the water, in a condition of equilibrium. The resistance of the piles to fracture at the ground line was calculated to be 47,127 lb. in relation to a force acting at the centre of pressure of the water. If one-third were taken as a safe load, the result was 15,709 lb. to resist a pressure as before stated of 15,125 lb. Disregarding these resistances, and reckoning the whole pressure of one bay to act upon each strut, the thrusts were —on the lower strut 222 82 tons, on the middle strut 77·5 tons, and on the upper strut 47 94 tons. But with every strut resisting an equal pressure the load on each would be 26·14 tons. For the pressure of the puddle on the tie-bolts, the author had no satisfactory data, but he assumed it to be less than that of a similar section of water, and approximately the load upon the tie-bolts was calculated to be, at all events, less than the following amounts:—On each lower bolt, 2¼ in. in diameter, 85,250 lb.; on each middle bolt, 2 in. in diameter, 54,375 lb.; and on each upper bolt, 2 in. in diameter, 37,625 lb.

The total cost of the removal of the dams was 1*l.* 4*s.* per lineal foot, made up thus:—Clearing out puddle, 13*s.* 6*d.*; dredging outside of dam, 7*s.* 6*d.*; cutting off piles, 3*s.* per lineal foot.

THE STATE OF OLD ST. PANCRAS CHURCHYARD.

The condition at the present moment of interesting Old St. Pancras graveyard is a disgrace to those who have control there. Herein are buried some of the oldest, noblest, and distinguished families of the three kingdoms, and mingling with them are remarkable and noteworthy foreigners or exiles from almost every European state. Common respect for the dead, if not archæological interest, ought to be apparent instead of absent, and whoever is to blame for this state of things, whether it be an individual or a local community, there ought to be no qualms in stating the facts above board. On the first occasion when we visited this graveyard, we noticed desecration, demolition, and neglect, and we deplored that it should be so. During these last few days we have again visited St. Pancras, and we were horror-struck at the wanton havoc, the triplefold, increased desecration evidenced. The shock of an earthquake, had it passed over this graveyard, could hardly have produced such wreck and ruin as may be witnessed by any person who chooses to visit and confirm our statements, for deny them none can. Since our previous visit, a period of a few months, several monuments have been smashed and tumbled down, and the iron railings surrounding others have been wrenched from their bases and carried away bodily. In fact, a system of constant plunder is going on in this graveyard, which receives not the slightest care, and has not the semblance of a walk except what leads to one or other door of the church. From some inquiries which we made in the precincts of the church, we heard that the disgraceful state of the graveyard was causing indignation and disgust in the neighbourhood, and an agitation is mooted for a local subscription to put the place in some decent state of repair, if it can be proved that there are no available funds for the purpose attached to the church living.

We allude to this painful subject in a rather forcible manner now, from the fact that we have on more than one occasion heretofore hesitated, in the hope that as what seemed the worst was reached matters would mend. Matters, however, that had gone on from bad to worse for some years (and more noticably since the Midland Railway crossed the churchyard) have now proceeded from worse to——: well, we are at a loss for a superlative to express it. We may simply say that though the dead in Old St. Pancras received a Christian burial at the period of their interment, their remains are now subjected to worse than barbarian treatment.

British Archæological Association.—The opening meeting is announced to take place at the Society's Rooms, 32, Sackville-street, on Wednesday, the 23rd inst., at eight o'clock, when Mr. Dillon Croker, F.S.A., will read a paper "On the Legends of the Wye." This was one of the papers prepared for the Hereford Congress, and postponed for want of time.

BUILDING APPLIANCES.

Rocke's Knobs and Spindles for Locks.—It was long the practice to fit the square end of the spindle of door-locks into a corresponding opening in the knob or handle, and then to secure them together by passing a screw-pin into the neck of the knob laterally to go into a hole sunk in one face of the spindle. This has always proved a troublesome system of fastening one to the other from the frequency of the screw pin getting loose when touched by the hand, and from the difficulty of adjusting the distances of the holes in the spindle to suit the varying thickness of doors to which they are to be applied. The invention patented by Mr. A. B. Rocke, consists in cutting a screw thread on one end of the spindle, and in fitting an internal threaded cap or socket nut over the same. When the spindle is passed through the lock, one of its knobs bears against the escutcheon plate or ring, and the free end projects beyond the other side of the door. Over this free end is passed the second knob, which is made with a hole to fit the spindle, and then the threaded cap or socket nut on to the end of the spindle is screwed until the second knob bears against its escutcheon plate or ring, with sufficient pressure to prevent any rattling of the parts, and yet allow an amount of freedom in turning. Sometimes both ends of the spindles are screw threaded; in that case both the knobs are secured by means of socket nuts.

The inventor claims as advantages of this sort of lock furniture over that in common use, that it can be produced more cheaply, as stamped mounts can be used instead of cast; is more easily adjusted, and cannot come loose; the spindles fit more tightly, so that there is not so much *rattle* about it as with the ordinary; and can be applied to knobs of any substance, as glass, wood, porcelain, and metal.

We have no doubt of its superiority over the method commonly in use.

Wilson's Patent Double Seal Stench-Trap.—In this trap now being manufactured by the Carron Company, the cup is about double the depth of the ordinary bell-trap, and has a grooved ledge around it, about half-way down. Fitting in the groove is an india-rubber washer, cast upon the bell. In place of the grating is a circular metal plate, having a narrow flange round its outer edge; cast upon the inside of the bell is a tube, about 8 in. long, pierced with large slots: this tube fits and passes downward through the hole in the bottom of the cup. Around the tube beneath the cup is a strong brass spring, held in position by a small collar screwing upon the bottom of the tube; it will thus be seen that the spring around the tube draws down the flange of the circular metal-plate with great pressure upon the rubber-washer, and excludes any stench that might arise from the drain and pass up through the water in the bell-trap beneath. To raise the tube, bell, and flanged plate, a thick rod is cast upon the plate, having a ring at the top, and passes upwards through an ordinary trap grating at the top; the rod is pierced at a certain distance down to allow of the inside appliances being drawn up, and a pin being run through the hole, so that when in use it forms the ordinary bell-trap, and when not in use, by withdrawing the pin, it drops and becomes impervious to stench, as before described.

THE SO-CALLED "CHARITIES" OF READING.

We mentioned last week the public meeting of the Reading School of Art. Mr. Henry Cole, in the course of his observations on that occasion, made some remarks on local charities, the spirit of which will apply to other places besides Reading. The speaker said:—I am told that there are lots of schools in Reading, but in Mr. Jones's "Sketches of Reading," a sort of guide-book to Reading, I find mentioned the churches and chapels, the charities, the hospital, the gas-works, the iron-works, the corporation; in fact, everything is mentioned except schools, and I am really puzzled to know how many schools you have, and how many children they accommodate. But I take it for granted that you have schools, and I also take it for granted that if you have not sufficient schools you will have to provide them either by your voluntary exertions, or by means of rates. In this book—"Sketches of Reading"—there is a great deal of curious information. I find here a list of charitable bequests to this town, and very remarkable they are. First I read that somebody, more than 200 years ago, left some rents to provide shirts and shifts for ten of the poor of Reading. I dare say in those days shirts and shifts were much more difficult to get than they are now, and I dare say that the land which was left to purchase them is worth a great deal more money than it was worth in the year 1610. Then, in the next year, there was money left for a charity, the like of which in all my experience I have never heard of before; one John Blagrave, who was taught in the Free School at Reading, and became an eminent mathematician, had this quaint notion: he left a certain amount of money to be given annually to poor servant-maids who had continued in one service in Reading in good name and fame for a term of five years at least. Then you are told how the money was awarded. Three poor maids were elected to try, and the winner was decided by the highest throw of the dice. Now, I do not know whether that goes on at the present day or not, but I have a shrewd suspicion that something of the kind takes place. The next thing we find is that there was a charitable fund provided for two or three poor butchers. Then, again about fifty years after, I find that a fund is left to be distributed every three years amongst six poor maids towards their marriage portions; in fact, if they were good servants, it would be to the interest of some rampallian to persuade them to get married to get their marriage portion. Then I found other rents were left which were to be given to three male servants, the chance to be decided by lot. You seem to have been a gambling set of people. Lastly, I find the maids again; the same kind of provision is made for them. Then it seems from this book that there has been a good deal of change of late years, and some part of these bequests have been turned to other purposes for the support of schools and other things, but still I find that annually at Easter, gifts of not less than 10*l*., and not exceeding 20*l*., are distributed to meritorious female servants, being members of the Church of England, and having lived five years consecutively in one family. That seems, by the wit of Chancery, and the good will of the people of Reading, still to be the way of distributing charity here. With all submission to you, I think you could do a great deal better with your money. I find that the total revenue from these charities amounts to 2,777*l*. a year; at least it was so a year ago. Now, I venture to suggest that great advantage would arise from using all these funds for the purposes of education. You hardly know what the amount is. Just imagine what good could be done with that 2,777*l*. You could have a series of institutions of an educational character. I hear that you are going to revive the Grammar School, and the Prince of Wales came here to lay the first stone. But you are going upon the old-fashioned plan of building the building,—and getting into debt for it I believe,—and then you are going to leave the master, just as you have left my friend Mr. Havell, to make the best he can of it. I am not quite clear that that is the right way. I do not like the term Grammar School. I do not believe that you will ever get a good Grammar School in Reading, although you had a good one here fifty years ago. Times have changed, and people want something else besides grammar; therefore I venture, in the interests of science and art, to ask you to look well a-head as to what is to be taught in that school after it is built and paid for. If you could but make use of this 2,777*l*. in the right way, you might have an excellent set of schools in Reading. At Faversham, in Kent, charities amounting to 2,000*l*. a year have been devoted to schools, and those who are interested in education in Reading should make a pilgrimage to Faversham and see what excellent schools they have got.

GENERAL CONDITIONS FOR CONTRACTS.

Sir,—In common, no doubt, with many of your readers, I have considered with great satisfaction the manly and true remarks made on this subject by the President of the Royal Institute of British Architects in his opening address. His very pertinent question must be answered. "Why not agree," he says, "to certain general conditions of contract as an equitable basis of contract between our employers and the builders engaged in their works." Mr. Wyatt is not ashamed to say "our employers." He does not support that absurd position which some architects wish to assume who talk of their "clients," and say that they occupy a position between the employer and the builder, and having no bias on one side or the other, are at all times ready to do even-handed justice. The demand to hold such a position seems to me ridiculous. There is not one man in a thousand who has the firmness and the cool, unimpassioned judgment necessary for such a post. In case of a dispute between the employer and the builder, the architect's own conduct is generally so mixed up in the question, that he were more than mortal to be able to do justice, in opposition to an employer, who may be a strong-minded unscrupulous man. Why should any gentleman object to a full and fair arbitration clause? I, as a builder, have found the objection to such a clause mainly proceed from a class of practitioners who are known for being most unscrupulous in their transactions with builders. There is many an architect to whom the builders of London would leave any dispute (in which he had no direct interest) with the greatest confidence; but no architect has a right to be arbitrator in a matter wherein his own conduct and interests must be so intimately mixed up. A model arbitration clause has been put before me, which I venture to think might be generally adopted. I send it herewith, in case you think fit to print it.

A London Builder.

"Provided always that in case any question dispute or difference shall arise between the employer or architect on his behalf and the contractors as to what additions if any ought in fairness to be made to the amount of the contract by reason of the works being delayed through no fault of the contractors or on account of any directions of the architect involving increased cost to the contractors beyond the cost properly attending the carrying out the contract according to the true intent and meaning of the signed drawings and specification or as to the construction of these presents or as to any other matter or thing arising out of this contract except as to matters left during the progress of the works to the sole direction of the architect under the clauses relating to the interpretation of the drawings and quality of workmanship and materials or in case of the contractors not being able to obtain from the architect any certificate to which they may claim to be entitled, then any such question dispute or difference or the matter or value which should be certified is to be from time to time referred without any suit at law or equity to the arbitration and final decision of of architect or in the event of his death or unwillingness to act then of of architect and in the event of his death or unwillingness to act then of an architect to be appointed on the request of either party by the president for the time being of the Royal Institute of British Architects and the costs of any such reference shall be in the discretion of the arbitrator."

LARGE HOTEL FOR COATHAM, REDCAR.

A meeting of the directors of the Victoria Hotel Company was held at Coatham, Redcar, last week, when it was unanimously decided to proceed with the erection of the building forthwith. The architect, Mr. Charles J. Adams, of Stockton-on-Tees, was instructed to procure estimates for the work in accordance with the designs approved, and to lay the same before the next meeting. The building will be a very large one, the hall in the centre, with galleries round it, being over 100 ft. long, and 35 ft. wide. There will be raised terraces in the front, 80 ft. deep. The site is a commanding one. It is intended ultimately to erect a club in connexion with this building, the front of which, when completed, will be 260 ft. long.

WORKS FOR THE COUNTY OF DURHAM.

The following works were, at the last Quarter Sessions, ordered to be commenced in the county as soon as the weather will permit, the plans proposed by Mr. Crozier, the county architect and surveyor, having been approved.

1. New police office, court, and station at West Hartlepool, including superintendent and sergeants' houses, rooms for single men, cells, stabling, &c. Estimated cost, 3,000*l*.

2. The same at Stockton. Estimated cost, (including purchase of an acre of ground for site), 3,000*l*.

3. New police court, cells, and men's rooms, at Jarrow-on-Tyne (including property purchased). Estimated cost, 1,200*l*.

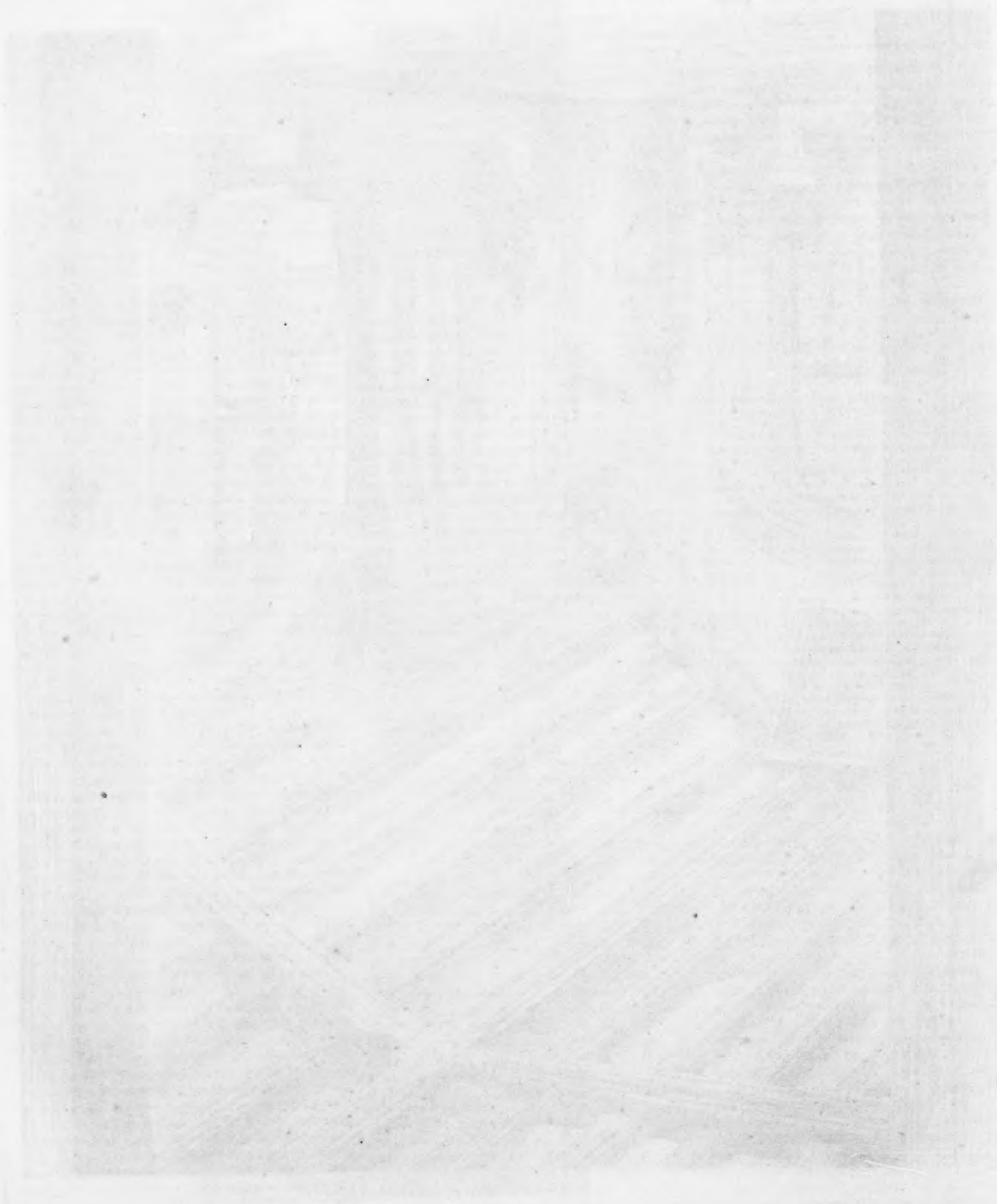
4. New police-office (occasionally to be used as a justice-room), new cells, and men's rooms, at Willington, near Durham. Estimated cost, 400*l*.

New police office and station, St. John's Chapel, Weardale. Estimated cost, 300*l*.

Superintendent's house, stabling, and improvements to court at Wolsingham, are now in progress.

A new police-station is also ordered for Shildon, near Bishop Auckland, and will be commenced in the spring.

There is evidently life in Durham,—and crime.



COUNCIL CHAMBER IN TOWN-HALL, DETTELBACH, BAVARIA.

COUNCIL CHAMBER IN TOWN-HALL AT DETTELBACH, BAVARIA.

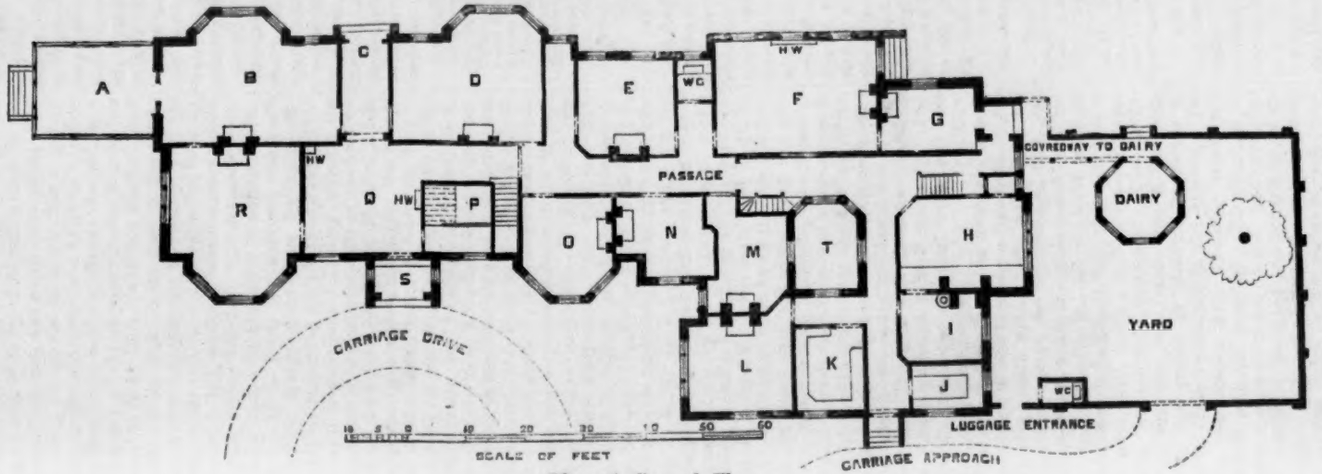
We have previously given a view of the interesting Town-hall, or Rath-haus, in the quaint little town of Dettelbach, near Würzburg.

It will be remembered by those who have seen our former illustration that this building is a large rectangular structure built over a stream, with a square porch attached to one of the longer sides. This porch is approached by two flights of stone steps, below which is a vaulted chamber used as a prison, and above the porch is a semi-octagonal chamber, which was originally a chapel or oratory. It is prettily vaulted in stone, and has a Late Gothic window in each face. The porch opens into a hall, with a large oak staircase. To the right and left of this hall are large chambers, with flat ceilings composed of huge beams of oak. These rooms now are used as a parochial school, and contain nothing remarkable. The rooms on the upper story are, however, very interesting. Opening from the upper hall or landing is the before-mentioned little chapel or oratory, and to the right of it is the remarkably interesting chamber represented in our illustration.

This room is about 46 ft. long by 25 ft. The ceiling is very noticeable: it is supported upon two principals, which are richly moulded, and these are connected by a series of purlins. There are no common rafters. This is not a *roof*, but simply a *ceiling*, as it takes quite a different form from the outer roof of the building, and is nearly 20 ft. below it. The ceiling is repeated over each of the four chambers in the upper story of the Rath-haus.

The sides of this Council Chamber are very picturesquely arranged. Each window is placed in a deep embrasure, formed by quasi-classical pilasters, adorned with medallions and ornamental panels. The seats formed in the window spaces are very picturesquely managed. All the windows in this chamber retain their old glazing, consisting of small circular panes of glass, and there is also some well-designed metal-work attached to the wooden casements. There are several curious old portraits of former *bürgermeisters* hung round the room, and some good furniture of the earlier portion of the eighteenth century.

RESIDENCE, WILDERWICK, EAST GRINSTEAD, SUSSEX.—Mr. Alfred Smith, Architect.



Plan of Ground Floor.

REFERENCES.

H.W. Hot-water Coils.
A. Conservatory.
B. Drawing Room.
C. Garden Entrance.
D. Dining Room.
E. Gentleman's Room.
F. Billiard Room.
G. Workshop.
H. Kitchen.
I. Scullery.
J. Brushing Room.

REFERENCES.

K. Larder.
L. Servants' Hall.
M. Butler's Room.
N. Housekeeper.
O. Store Room.
P. Q. Hall and principal Staircase, with Cloak Room, Water-closet &c., under.
R. Library.
S. Entrance Porch.
T. Open Court.

RESIDENCE, WILDERWICK, EAST GRINSTEAD, SUSSEX.

"WILDERWICK," which we illustrate in our present number by a perspective view of the *entrance front* and a *ground-plan*, is about two miles and a half from East Grinstead. The site of the house has been chosen both to command beautiful views of the surrounding country, and be in proximity to the fine-grown trees, which are always valuable in preventing a nude or raw appearance round a new house; but before building on this site it was necessary to make a mutual arrangement with the parish to divert the road to Lingfield, thereby shortening it considerably, and leaving the house sufficiently distant from the road.

The entrance-porch, 8 ft. square, opens into an entrance-hall, 36 ft. by 19 ft., which contains the principal staircase, and small cloak-room. The hall, being two stories in height, has a gallery leading to the bed-rooms, and is lighted by a sky-light, in addition to the windows. Immediately on the left of the entrance is the door to the library, 22 ft. by 19 ft. (with bay window), and opposite, on the right, is the door to the cloak-room. A corridor facing the entrance porch gives access, on the left, to a drawing-room, 30 ft. by 17 ft. (with bay window), which communicates by glass screen and door, with a conservatory, 20 ft. by 16 ft.; on the right to a dining-room, 25 ft. by 17 ft. (with bay window), and leads thence by double glass doors (protected externally by projecting oak barge-boarded roof) to the lawn and terrace. Passing through the swing-doors to the extreme right of the hall, we have, on the garden side of the corridor, a 5-ft. passage for light, which, being near the swing-door of the dining-room, is fitted up with a dinner-flap; a gentleman's room, 17 ft. by 16 ft.; a water-closet and lavatory; a billiard-room, 27 ft. 6 in. by 19 ft. 6 in., lighted from the roof, in addition to the windows (one of the latter has a slate hood, and hung as a casement, affords access to the garden); and a workshop, 16 ft. by 11 ft., which communicates with the billiard-room, as well as the garden. On the other side are a lady's store-room (fitted with lavatory), 15 ft. by 13 ft., with bay windows; housekeeper's-room, 14 ft. by 14 ft.; butler's room, 20 ft. by 14 ft., fitted with strong closet; and an open court for light, 15 ft. by 10 ft.; passing which (in the passage leading to back entrance), we have a kitchen, 22 ft. by 16 ft. (with small cook's pantry); a scullery, 13 ft. by 12 ft.; brushing-room, 12 ft. by 7 ft.; a servants' hall, 18 ft. by 15 ft.; and larder, 15 ft. by 12 ft. On the first floor are three good bed-rooms (with bay windows), three smaller bedrooms, two dressing-rooms, a boudoir, bath-room, and water-closet, in addition to which, and over the kitchen offices, are five maids' bed-rooms, housemaid's, and water-closet, two men's bed-rooms, and a large box-room. The men and maids have separate and distinct staircases to their rooms.

In the basement are coal, wine, and beer cellars, and game larder.

The external walls of the house are entirely constructed of the local stone (quarried by the proprietor), with square beds, and joints, and rough face, except the weatherings, cills, and window-heads, which are rubbed, and the dressings and quoins tooled. All the walls are lined inside with a half-brick wall, tied with iron to the stone wall, leaving a 2-in. space between them, to prevent dampness. The hollow space has also been made use of for ventilating the rooms at pleasure by means of sliding brass ventilators in the skirting. The roofs are covered with Delabole slates, and finished with tile cresting. The principal reception-rooms are fitted up with pitch-pine, and the panels of the doors and window backs are arranged so that the heart of the wood producing the figures comes in the centre of each panel. The staircase is also of pitch-pine, with turned and twisted balusters.

The estimated value of this house is called (in round numbers) 10,000*l.*, including conservatory and heating with hot water. Mr. J. T. Chappell, of London and Steyning, has carried out the works, from the designs, and under the superintendence of Mr. Alfred Smith, architect, of the Adelphi.

Reydon Church.—I wish some one would attack the cruel people who have whitewashed the grey stone walls of Reydon Church, in Suffolk, and further embellished the exterior with facings of gas pitch.—B.

MANAGEMENT OF THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

SIR,—Your youngest professional contemporary has of late taken such a truly filial interest in the welfare of the Institute that one can but regret when its advice is ill-timed or is based on assumptions which are not precisely in accordance with fact. In a leading article of last week, which refers, *inter alia*, to the financial condition of the Institute, we read as follows:—

"It appears that a considerable sum of money—not much less than 2,000*l.*—is annually expended in its support. This ought to produce tangible results. It would be false delicacy to overlook the fact that questions are often put to members by strangers, and even to leading members by others, bearing upon this point, which are not easy to answer."

Now, sir, as a plain matter of figures, the expenses of the Institute last year did not exceed 1,440*l.* I attend the evening meetings in Conduit-street pretty regularly, and I am not aware that any great curiosity is manifested by "strangers" as to what the details of these expenses may be. Still less am I disposed to believe that any member of the Institute can be ignorant on this point. Lord Dundreary has with truth observed that there are some things which *no* fellow can understand, and there may possibly be Fellows of the Institute who are puzzled by a debtor and creditor account; but inasmuch as a balance-sheet of receipts and disbursements is printed and sent every year to every member, what delicacy or difficulty there need be in answering questions on finance, I am at a loss to conceive. Referring to my own copy of this document for 1869, I find that the expenses of the Institute for that year (omitting shillings and pence for the sake of brevity) were as follow:—

Rent, fuel, and light	£264
Stationery, postage, and advertisements	54
Salaries and wages	386
Publication of Transactions: reporting, printing, and illustrations	211
General printing	159
Furniture, fittings, and repairs	50
Refreshments at evening meetings	22
Expenses of conversazione	116
Purchase of books for library	37
Money prizes and medals awarded	83
Donation to the Architectural Museum	25
Petty disbursements and sundries	22
	£1,429

I submit, sir, that this is no very large sum to represent the annual expenses of a society which includes about 600 members, which rents amply-sized and convenient premises in the best part of town; which retains in its service a secretary, a librarian, and a clerk; which publishes its Transactions once a fortnight during the session, well printed and well illustrated; which is liberal-handed with prizes and donations; which is constantly adding to the contents of its library; and which provides an annual entertainment for a thousand guests. After doing all this, the council managed last year to invest 384*l.* in Consols, and to carry forward a balance in hand of some 130*l.* to the present year's account. Does this look like deficient administration in finance?

But the article goes on to lament a supposed *décadence* in other respects:—

"There are not a few who are disposed to maintain that in that important function of concentration of energy, which is commonly called '*doing business*,' the management of the Institute for the last few years has not been so successful as it once was. The days of Mr. C. C. Nelson and Mr. Hayter Lewis are frequently recalled to memory, when benches are empty and affairs are tied up; and we must be bold enough to express the hope that . . . the future may soon become worthy of the penultimate past."

I will not, sir, pretend to gauge the precise significance of these remarks. Whose or what "affairs" the writer has observed tied up will probably remain a mystery to all but himself. For my own part, I am reminded of "the days of Mr. C. C. Nelson and Mr. Hayter Lewis," not "when benches are empty," but when they are well filled. It is possible that this may be the writer's meaning, though he says precisely the reverse: but a gentleman who believes in the "functions of concentration of energy," and in the "penultimate past" (why not, while we are about it, say the *paulo-post futuro?*), may be excused for being a little obscure, particularly when he devotes himself to that absorbing zoological pursuit,—the search for mares' nests.

In conclusion, sir, let me ask seriously whether there is, after all, so much to regret in the present conduct of affairs at the Institute? Is it nothing that the Voluntary Architectural Examination has been revived? that Mr. E. M. Barry's cause has been espoused so warmly? that the Institute has met the Builders' Society in friendly consultation for the public good? Is it nothing that it has offered additional encouragement to the art-student? that it has kept a watchful eye on the new Building Act? that its committees do their best to maintain a due respect for ancient monuments, and preserve the integrity of professional practice? Are its meetings really less well attended? its sessional papers less carefully edited? its official duties less conscientiously discharged now than formerly?

I leave these queries to be answered by any one who will give credit where credit is due, and who may be, like myself,

A PLAIN-SPOKEN FELLOW.

THE RIGHT TO THE ARCHITECT'S DRAWINGS.

SIR,—I see some judicial authorities seem to be of opinion that the original drawings of a building belong to the client, instead of the architect; if so, it suggests the following queries:—

Is the architect required to furnish *without charge* copies of the plans for the use of the contractor?

Is a sculptor entitled to retain the model from which he executes a statue which has been expressly designed for a client?

If I order a piece of machinery, can I claim all working drawings or models which may have been prepared for the use of the workmen in the manufacture of the same?

If I employ a solicitor to prepare a conveyance for sale of property, can I demand of him the draft copy?

If Baron B., or any other Judge, gives judgment against me in a cause, and I have consequently to pay the costs, am I entitled to demand the notes he takes on hearing the case?

A PUZZLED INDIVIDUAL.

ARCHITECTURAL EXHIBITION AND ARCHITECTURAL MUSEUM.

SIR,—The suggestion of "E. W. T.," in your last number, for an Architectural Exhibition in our Museum is one on which I should be glad to hear further, either from him or from others interested in the subject. Some years ago the idea was talked over by the officials of the Exhibition and the Museum; but although, as it then appeared, we had not space for so large a number of drawings as were displayed in Conduit-street, we might accommodate such as "E. W. T." refers to, and, in addition to the advantage he mentions, there would be the opportunity of looking at our own collection, not studied as much as it ought to be, considering its value and its convenient position.

As some expense in advertising, printing, &c., would be incurred, funds in addition to the present resources of the Museum would have to be provided,—perhaps by a fee for exhibition, or by exhibitors becoming members of the Museum. But would not the Exhibition committee themselves arrange with our council to continue their work in our Museum in the modified form suggested by "E. W. T."?

JOSEPH CLARKE, Hon. Sec.

MEMORIAL FOUNTAIN, GLASGOW.

COMPETITION.

SIR,—Nine months ago the Commissioners of the Glasgow Corporation Waterworks advertised for designs for a memorial fountain to commemorate the services of the late Lord Provost, Mr. R. Stewart; the cost of the fountain was not to exceed 4,000*l.*, and a premium of 50*l.* was to be given for the best design. It would appear that about fifty architects sent in drawings, and for eight months nothing has been known for certain what the Commissioners' intentions were about awarding the premium. The minds of the competitors were, however, set at rest by each receiving from the secretary one of the most impudent notes I ever read, dated the 9th of November, informing them that the Commissioners have agreed that the cost of the fountain shall not exceed 2,000*l.*, instead of 4,000*l.*, and they are further invited to do their work over again,—to send in "modified designs," is their pleasant way of stating it. But the impudence, meanness, and dishonesty of the affair lie in this—that they do not intend awarding the premium already wrought for by the man who has sent in the best design according to the first

invitation, and which I hold they are legally and morally bound to do.

My object in writing to you now is, first, to call attention to the rascality of this; and, in the second place, to call on the competiting architects to insist on the first competition being decided, and the premium paid, as promised, before the second one goes on.

I hope it is quite unnecessary to say that no architect who has the honour of his profession at heart will so far demean himself as to take any notice of this second call for new designs till the present competition be decided.

A Competitor.*

BROOKS'S BANK, MANCHESTER.

Sir,—In speaking of the new bank illustrated in your pages, you justly observe that "Mr. Truefitt has shown, as usual, much originality in the design;" but there is something not quite satisfactory about the appearance of the large porch as shown in your illustration. What is the construction of the sides of the porch: is it an arch or a lintel? The jointing of the stones, so far as indicated, appears to be vertical, which leads to the conclusion that the masonry is, in fact, supported across the sides of the porch by what appears to be an iron girder, forming a straight soffit below; but, if so, why use the arch form in the masonry, thus suggesting the idea of an outward thrust tending to push over the angle column? And, again, in the front of the porch, where the bearing for the masonry is shorter, are the three flat arches really arches, or lintels? The absence of any indication of jointing leads to the latter supposition; but, if so, why cut away the stone into the arch form, and thereby weaken its bearing capability, besides incurring a waste of labour and material? Perhaps Mr. Truefitt can explain; but the feature as shown in your engraving is not quite satisfactory to the eye of

A Critic.

Thanking you for enabling me at once to answer "A Critic's" question as to the construction of the porch at Brooks's Bank, Manchester, I beg to say that the arches, front, and sides are all properly jointed (and not vertically so); that the T iron beams, fringed below and perforated ornamentally, form permanent "centres," which give an appearance of, as well as actual strength to, the arches; and this would not have been gained if they were tied together, as is often the case, with hidden rods.

The only other way of treating these openings in stone would have been with straight lintels and upright joints (single stones being out of the question), and with iron supports visible or hidden. I am afraid, however, that your correspondent's eye would have been offended much more by that mode of treatment.

George Truefitt.

CEILINGS AND THEIR CONSTRUCTION.

It may appear at first sight somewhat absurd that I should trouble you with a communication on the above, but having had a ceiling fail in a building in which great interest had been taken, and having heard recently of many similar instances, I thought the subject worthy of investigation, involving, as it may, some of us in trouble and certainly in expense: so to the point. The ordinary mode of procedure is as follows:—Laths are fixed to the joists, very often closely together, and frequently the ends of one row are nailed over the ends of the adjoining row: the coarse stuff, as well as the fine, is "run." Thames sand is used, and the plasterer, to get over his work as quickly and conveniently to himself as possible, forms his screed across the ceiling with too great a substance of coarse stuff, and consequently unduly weights the laths; add to the foregoing the very short hair which only is at this time to be obtained, and you are in a possession of the causes of failure. I will now suggest what I believe to be a remedy. Though mentioned lastly, yet by no means least in importance, is the hair supplied to us. Why is it so short? The answer is that in these days every effort is made to improve the breed of cattle, and the finer the breed, the shorter the hair. It is true, we have importations of hides with long hair from cold countries, and with coarse shorter hair from the River Plate and Monte Video, but for building purposes this hair is no longer available, and for the following reasons:—The tanner sells to a middle man, who assorts the hair, and sells the longer to blanket and felt manufacturers: so if we insist upon long hair we must describe goat's hair: this in the wet is 3s. 6d. per bushel. Double fir laths should be used instead of the thinner varieties, known as single fir. Thames sand makes the stuff too short, and should not be used. Sand obtained from roads that have been metalled with ordinary pit gravel is the best. Plasterers should be restrained from overloading ceilings, which should have only the minimum substance upon them; and, lastly, coarse stuff should not be "run," because the process takes from its strength, and that it does do so is evidenced by the fact that run stuff seldom or never blisters; if run coarse stuff is used it should be for the floated coat only. The pricking-up coat should be made after the old manner, that is, chalk-lime should be slaked, road sand added, the whole turned up in a heap and allowed to remain for a time, then passed through a screen, and afterwards made up with a large quantity of hair and water, and allowed to remain three or four weeks before use. This will prevent blistering, and thus may sound ceilings be obtained.

T. E. Knightley.

* Two other letters to same effect received.

THE SCULPTURE IN THE BRITISH MUSEUM.

Sir,—From the manner in which a letter in your paper of October 8th, on the cleaning of the sculpture in the British Museum, has more than once been brought to my notice, it seems to be assumed that I am in some way responsible for the care and material safety of the collection, and for the dangerous treatment it is said by your correspondent to be undergoing at this time. I shall be greatly obliged if you will allow me to state that I have no connexion whatever with the British Museum. Some time since I received a letter from the secretary, informing me that the trustees did not consider the services of a sculptor were required in the sculpture department, and my attendance closed.

Richd. Westmacott, R.A.

A LONG STRUGGLE.

We have reason to believe that the following statement is correct. We go out of our way to print it, in the hope that one of our readers may find himself able to give a hand to a man who appears to have persevered under difficulties:—

Sir,—Believing you to be a friend of the working man, I have taken the liberty to address these lines to you, thinking you might be able and willing to give me some suitable advice. A sketch of my life will, I think, be the best way of making you acquainted with my wants of the present.

My age is forty-nine years; I am the eldest son of a working gardener, who was too poor to give me any education more than could be obtained at an old-fashioned day-school, kept by an old man who had seen better days. He usually slept half the time away: so my chance of acquiring knowledge was not much, especially as I never went after I was ten years old. I learnt to read and write and cypher a little. I first went to work in the garden; after that I went to a coach-painter's for a year, and then three years at a wire factory in London, the working hours of which were from 6 a.m. to 8 p.m. As I had to walk four miles, I used to get up at four o'clock in the morning, and it was generally half-past nine at night when I reached home. Not much time, you will say, for a boy to improve himself. But I advanced a little. Every penny I could get went for books, which I read with avidity. Poetry I had a great predilection for; I even tried my hand at versifying. I tried also at drawing and painting in water-colours, but did not succeed, for want of technical knowledge; for I found no friend to assist me in my studies. After a deal of practice, I became a tolerable letter-writer. Any fresh character I saw I could copy with accuracy.

When I was sixteen years old my mother died, and I was sent into Berkshire, to an uncle, a master-builder, doing a good business. There my mind received a new bias. I saw that buildings were delineated on paper before erection: consequently there was some scope for taste and imagination. I purchased a case of second-hand instruments, and in a little time I became an expert draughtsman and colourist. Finding that many more things were requisite in the building trade, I went into geometry, arithmetic, mensuration, &c. Having a great aptitude for figures, I was not satisfied until I had mastered land and timber measuring and gauging. Some of these things I have now almost forgotten, for the want of practice. While I was learning those things I did not omit to seek practical knowledge: I worked at bricklaying, carpentry, and masonry. Not that I can work at either of those branches like a man who has made only one of them his study for life, but I thoroughly know how they are to be done. To vary my amusements I next looked to music, and learned so far as to play tolerably on the violin and harmonicon. I next took to writing poetry, of which I have inclosed you some specimens, which were published in a local paper in Bedfordshire.

At the death of my uncle the business fell to pieces, and I had to look for employment elsewhere. I have been journeyman, foreman, &c., in various parts of the country. I have built shops, dwelling-houses, farm-buildings, railway stations, schools, churches, &c., some from my own designs; but I am now, with a large family and invalid wife, in want of a job.

What I profess to do is to take charge of any sort of work in the building trade, set out and measure up the same, take out quantities, prepare working and other drawings, measure land or timber, keep a prime-cost account, keep time, &c. I think I should be useful to a surveyor or builder. My character will bear any amount of investigation as regards honesty, industry, and sobriety. I have not stated anything but what is true. My drawings will speak for themselves, and for the other things a few minutes' examination would be sufficient. For these last six weeks I have advertised, but have not met with anything. My finances are now getting low, and I should like to meet with something to bear me over the winter; I am not particular what, so that I can live by it. If it is in your power to assist me to a job, I shall be extremely obliged to you, and shall feel ever grateful for the kindness.

I have tried all my life to bring my family up in a respectable manner, and I wish to give my boys a better start in life than I had, but at the present I see no prospect of doing so, for I have only been able to exist by studying the strictest economy.

W. M.

CHURCH BUILDING AT THE PRESENT TIME.

A few observations made by Mr. Godwin at the Institute last week brought forcibly to mind the enormous extent to which church and chapel building and restoration have for some time been carried on by the Established Church, the Nonconformists, and the Roman Catholics. The following, from a Doncaster paper, bears on the subject:—

"The church-building of the present day does not depend on great feudal lords, but upon the combined efforts of every class according to their means. The new church of St. George, Doncaster, must have cost, from first to last, not far short of 60,000*l.* In the thirteenth or fourteenth century the cost would have been about 5,000*l.* Ripon Cathedral has been restored at a cost of 40,000*l.*; the parish church of Grantham, at a cost of 20,000*l.* Within the last fifty years the number of churches in the parish of Sheffield has increased from four to about thirty. The Bishop of Ripon stated at his visitation last month, that the number of churches consecrated in his diocese was seventeen in the three years ending 1866, and 27 in the three years ending 1869. The Bishop of Lincoln reported an equally satisfactory progress in his great diocese. In the course of the last three years sixteen new churches had been built in the diocese, and seventy-seven churches had been rebuilt, restored, or enlarged; and at a meeting at Nottingham, on Monday, to promote a lay organisation to co-operate with the clergy, it was stated that during the past few years 400,000*l.* had been expended in the county in building and restoring churches. We should feel obliged if any of our clerical readers would supply us with the statistics of church-building and church restorations in all the dioceses of England for the last few years."

A. B. C.

Re HALIFAX PERMANENT BENEFIT BUILDING SOCIETY.

Sir,—Will you allow a competitor to reply to the inquiry made by "Suspense," as I am afraid he would have to remain longer in suspense if he had to await some official information. I chanced to learn the following in respect of the matter, and when I tell him that the building has been already commenced, he will perhaps be surprised. The design first in order of merit, as he well knows, was put aside on the score of cost. The second seems to have been more successful, as Mr. Samuel Jackson, of Bradford, the author of it, is carrying out the work,—how, I cannot say; for I have had the opportunity of thoroughly examining the perspective of this, as also the one rejected, and I must say they present a very striking resemblance to each other in point of cost. Somehow the second premium is awarded, but the third-best has not yet been found by the committee. One competitor, I was told, had withdrawn his design, which will probably be the course followed by others, to get back their designs.

A Competitor.

ROYAL ACADEMY OF ARTS.

INSTRUCTIONS FOR ADMISSION OF STUDENTS IN ARCHITECTURE.

Questions respecting the admission of architectural students to the Royal Academy, and the proposed course of study there, are so constantly being made in the professional journals, that I should feel obliged if you could insert the enclosed "Instructions for the Admission of Students."

As regards the proposed course, I will take the earliest opportunity of communicating it to you, so soon as the Council of the Royal Academy may have decided on it.

R. Phené Spiers,
Master of the Architectural School.

Each candidate to be a student in architecture shall present to the Council a certificate from an architect-member of the Royal Academy, of the Royal Institute of British Architects, or of any other public institution for teaching art and science, certifying that the applicant has followed up the study of architecture and architectural drawing, and has acquired a reasonable degree of proficiency in the same. The applicant shall further submit to the Council three drawings (not necessarily made for the occasion), to consist of a plan and elevation of some building, and a drawing of ornament from the cast; such drawings being declared by him, in writing, to have been wholly executed by him, and the same being attested by the person recommending him, to the best of his knowledge and belief. If such certificate and drawings are approved by the Council, the candidate shall be required to make, in

the Academy, such drawings or designs as may be required —the subjects to be determined by the Council; which drawings, together with the certificate before referred to, shall be laid before the Council; and if approved, the candidate will be admitted as student for seven years, in like manner as other students.

Those who have been unsuccessful in their first endeavours can renew their application at any subsequent period, by again going through the prescribed forms.

All instruction in the Academy is gratuitous, the student providing his own materials.

Letters and packages from the country must be addressed, prepaid, to the Registrar, Royal Academy of Arts, Burlington House. Persons resident in London or its vicinity must apply personally.

Lectures, to which probationers and students have access, are given, on,—Architecture, by Mr. G. Gilbert Scott, R.A.; Sculpture, by Mr. Henry Weekes, R.A.; Painting, by Mr. Charles West Cope, R.A.; Anatomy, by Mr. Richard Partridge; Perspective, by Mr. Henry Alexander Bowler.

Master of the Architectural School, R. Phené Spiers.

The Library, containing a very valuable collection of works of art and architecture, is open to all students on Mondays, from 10 a.m. to 3 p.m., and 4 p.m. to 5 p.m.; and on Tuesdays and Thursdays, from 5 to 8 p.m.

GREASE FROM VELLUM.

Can any of your readers mention a process for extracting grease spots from the pages of an illuminated book? The vellum in question is modern. L. H. B.

THE STRIKE AT EATON HALL.

Sir,—With reference to the strike of masons and labourers under the employ of Messrs. Smith, Taylor, & Co., builders, at Eaton Hall, Cheshire, I will, with your permission, state the facts of the case.

There were certain arrangements in existence which the firm could not tolerate any longer; for instance, in connexion with the fixers alone, there were thirteen fixers, twenty-one fitters or jointers, ninety-two labourers, with only ninety-one banker masons, on a very elaborate job. The work was costing nearly as much per cube foot fixing as preparing. The firm were perfectly satisfied with the amount of work performed by each man (taking in consideration the facility afforded him). The change consisted in supplying each fixer with materials by a system of tram-roads and other mechanical means; so that we should have doubled the quantity of work done by each fixer, without calling on him for any extra exertion (or, as they said, endangering their lives). The men, or, more strictly speaking, the mob of masons and their labourers, would not listen to a word of explanation, but struck work before I had been on the works twenty-four hours. They at once resolved themselves into a committee of the whole body (after telling me they would not have a b—— stranger there), for the purpose of howling and threatening, which, I suppose, is the fashion of the Cheshire masons and their labourers of discussing what they term their serious grievances.

The Stranger they would not have down there.

CAN AN ARCHITECT'S "YOUNG MAN" BE A GENTLEMAN?

Sir,—I have ever observed your willingness to aid in a good action. Grant me, then, a corner of your paper that I may pour some oil on the troubled waters of "J. J.'s" stormy bosom:—

My dear "J. J."—You arrived at the house of Æsculapius, and, feeling yourself a Wren, twice upon the knocker you claimed admittance. Awaiting the response, you stood radiant with intellect; the five orders shining out of your Vitruvian eyes, and the "Early, Middle, and Late Pointed" peeping out of your *kit*. There you stood, the perfect type of a perfect gentleman, before the castle of an equal—more probably of an inferior—at whose gate the fortune of war compelled you to lay down your sword,—I mean your saw. But *Saw-bones* saw it not. He saw in double knocks anatomy and filthy lucre. But, glancing in the mirror cunningly arranged outside his window, what *did* he see? "A common carpenter"—it could not be—one of the lowly herd of artisans. And yet it was so. With maddening wrath he pounced upon you. "Man of glue," he said, "made from the filth of knacker's yard, down on your knees. How dare you thus ——." But let me not recall his brutishness, but point out your revenge.

Take a house—a mansion—near the den of this savage. Let it be such a one as your architectural mind has so often pictured, and furnish it as your elegant taste may dictate. Keep six lacqueys for his one; a four-in-hand where he keeps a one-horse chaise. Pass him on the road; distance him everywhere. Feign illness; send for him; and should he dare to raise your knocker twice, take no apology, but tar and feather him. Do this, and won't you chuckle as you sip your port and read his whining letter in the *Lancet*, inquiring, Can a surgeon be a gentleman? My good "J. J.," add to your knowledge of common carpentry, and to your uncommon knowledge of architecture, a few grains of common sense, and you will find the mixture uncommonly soothing to your nerves. Increase the latter ingredient, and your present nervous condition will wear off. Your attacks of nightmare will be less frequent. I will state a case where the symptoms were much worse than yours, where common sense had to be administered in homœopathic doses; but I am happy to state that the patient is now quite recovered, and able to go about like any other man.

Very early in life Talbot (who is now thirty-six) served his articles with an architect. Like you, he laboured to raise himself above his fellows; and in course of time, so far as becoming entitled to add to his name ten letters, expressive of three several distinctions, he succeeded. His spare hours and spare coin were devoted to the effort. With what result? His pretensions caused him to be sneered at. He became ill,—you know the way the disease sets in. But by the constant injection of common sense under his thin skin, he gradually came round, and is at present a good strong architectural *hack*. If he goes, on his employer's business, to the house of a client, whether an apothecary or a pawnbroker, his knock is the most insinuating; for he is aware that he is only Mr. C.'s clerk, or Mr. C.'s *young man*, and his knock is based on the style of the visiting governess, transposed to a much lower key. His modest knock saves his dignity many a knock down. The apothecary or the pawnbroker is so taken with it that he will sometimes, in a gush of amiability, condescend to make a remark touching the state of the weather; but, of course, he knows better than to place himself on any more familiar footing with Mr. C.'s young man, a young man that he has more than once seen blown sky high, a young man that Mr. C. would not make nearly as familiar with as he does with his coachman. Now, Mr. C. himself expects Talbot to be a man of artistic taste and very refined feeling, fully capable of realising in form and colour all manner of grand poetic conceptions. Why should he not be so? He is paid for it. But what business has he to mind if he is more frequently met with a frown than a smile? What right has he to permit his poetic feelings to be blunted with the recollection that his shortcomings are never forgotten, his successes never lauded? Writing to Captain Hill, a client, Mr. C. says,—"My young man, Talbot, is sufficiently intelligent to see to the matters to which you refer; I shall send him over to-morrow." Talbot goes; and, having seen to the matters referred to, but not having been *seen* by Captain Hill, who could not see an architect's young man,—no, not through a microscope,—Talbot receives intimation, through the butler, that the servants are at dinner in the hall. He declines the invitation, and takes a pick at an inn in the neighbourhood. He has long since discovered that an architect's *hack* cannot be a gentleman, and he accepts the situation with resignation. But he sometimes asks himself the question whether an architect can be a gentleman; and if so, why he is not so more frequently. Henry Tobin.

THE RIVER. MDCCCLXX.

Instar Omnium.

O River of dismal haunts!
Livid, discolour'd, and changed;
Once thou wert clear to thy founts,
And death was from thee estranged.

Now thou art hellish, in sooth,
Rife with the breath of disease,—
A river of blood, and, to boot,
A river of wealth 'midst these.

Into thee is it still meet
The City should cast foul slime,
While law in the public street
Makes nuisances a crime?

O River of myriad ills!
Pure at your primal source,
In turning a thousand mills,
You're foul'd at last perforce.

Factories, reeking with fumes
And sewage, seething and fell,
Oozing its way 'neath the tombs,
Making the river a hell.

Roll on, and never roll back,
E'en with the flow of the tide;
Roll on, most putrid and black,
Till our city is sorely tried.

But warning cometh in vain,
We wallow still on in filth,
Choking each sewer and drain,
And building as Babel was built.

The husband, and wife, and child
Are craving for light and room,
For water and air undefiled;
And must they crave on till doom?

O Statesmen, look to the poor,
Stricken and dowerless, who
Can but pray to God, and endure,
The while looking up to you.

C. H. C.

APROPOS CHARADE.

My first is heard where stock, and shares,
And money most abound;
The sound suggests an ancient man,
Weak, wrinkled, silver-crown'd.

My second has no past, no future,
Only the present day;
'Tis here, inexorable as Fate,
And it never goes away.

My whole lived in the ancient days,
So very fair and bright,
That modern time has named from him
Her fairest, gayest sight.

Fierce were the men of ancient days;
They slew my beauteous whole;
But fiercer yet the men who thirst
For his modern namesake's soul.—A. H. S.

Ans.—PARIS.

ERRONEOUS ESTIMATING.

Sir,—Referring to the two lists of tenders commented on in a recent number, I find that taking the list, "the alterations and additions to Nos. 3 & 5, Buckingham Palace-road," the average is 1,621*l.*; that leaving out the first and last two, the average is 1,566*l.*, so that the lowest tender is nearly one-half the average.

For the "Odd Fellows' Hall," the lowest tender is two-thirds the average. It would be interesting, I think, to members of our profession if the architects' estimates in these instances were published, as I am a little at a loss to know on what principle tenders so much lower than the average (especially from quantities) can be carried out.

A Surveyor in Practice many Years.*

* We have received some statements concerning the Buckingham Palace Road tenders which are so remarkable that we must look at them again before we decide as to publishing them.—Ed.

THE CHELSEA OFFICIALS AND THE METROPOLITAN LOCAL MANAGEMENT ACT.

Mr. Daniel Wyatt, of Eldon-terrace, Maude-grove, Fulham-road, was summoned to Westminster Police Court by the parish of St. Luke's, Chelsea, for neglecting to pay the sum of 27*l.* 14*s.*, being his share of the expense of paving the said terrace. Mr. Rayment, barrister, instructed by the solicitors to the vestry, prosecuted; and Mr. John Evans, of John-street, Bedford-row, defended.

The short facts are these:—On the 26th of September, 1867, a resolution was come to by the vestry to take to and make up Maude-grove, and an order was served upon the inhabitants to that effect. The parish subsequently did what they deemed necessary in order to put the street in thorough repair, and it was contended that the sum charged to the defendant was a fair one, and for which he was liable according to the Act of Parliament.

For the defence, Mr. Evans, who defended in the absence of Mr. Straight, tendered himself as a witness, and from his testimony and that of other persons it appeared that Mr. Evans built the whole of the houses in the grove, at a cost of 20,000*l.*, and early in 1867 asked the vestry to make the road and pave. In September they passed a resolution adopting the street; but in consequence of the opposition raised by some of the inhabitants as to the excessive cost, they subsequently abandoned it. The street was impassable, the property deteriorating, and, after repeated applications to the vestry to complete the work, he did it at a cost of 300*l.*, made the road, and paved the fronts of the whole twenty houses, the work being done thoroughly and well. Subsequently the vestry came to the decision, in January last, that the work had not been properly executed, and although Mr. Pattison, the surveyor to the parish, had sanctioned the work and put down the pegs for the levels himself, the stone was all taken up, a quantity of it broken with hammers and carted away, and the remainder relaid, and the defendant therefore held that on this ground alone, without entering upon other points, he was not entitled to pay, as the vestry had not paved within the meaning of the Act.

Mr. Woolryeh said it was a hard case for Mr. Evans. If, however, the vestry had proved that they had done work which was paving within the meaning of the Act he must have made an order. This has not been done, and therefore he should dismiss the summons for want of evidence.

Mr. Rayment asked his worship to state a case for the Court of Queen's Bench.

Mr. Woolryeh said he should decline to do so. They would have to serve him with a rule, when he should say that certain resolutions were come to and an order made; that this order had never been enforced and still existed; that the inhabitants were compelled to pave their street; and that afterwards the vestry went there, pulled the stones up, broke some, and put the others down again. He acknowledged the supreme power of vestries, but at the same time a magistrate was not a puppet, who simply sat on the bench to register their edicts and decide for them without a sufficient proof. They had behaved very harshly in this matter, but still, as he had said before, he thought he should be compelled to make an order. If they brought sufficient proof, and if Mr. Pattison were so far compromised that they could not bring him into court, the barrister, or some one who knew the facts, would do, but not a clerk who sat behind a desk and knew nothing of his own knowledge.

Subsequently, after a great deal of argument, the case was adjourned for a fortnight.

COUNTRY PATHS.

Sir,—Mr. G. R Jesse's suggestion that the Ordnance maps should define public footpaths and byways, to preserve or secure the right of way, is worthy of notice; but it might be difficult to do so, on account of confined space. The definition would aid travellers and pedestrians, as I can testify from experience. It has, I believe, been decided recently by the common-law judges, that a footpath may be ploughed up by the land-owner legally, to the prejudice of the public, provided that the right of way is preserved. Chr. Cooke.

MONUMENTAL.

Statue of the Prince Consort at Cambridge.—The Syndicate appointed June 2nd, 1870, "to consider the best site for the statue of his Royal Highness the Prince Consort, and to report thereon to the Senate," have made a report to that body, recommending that the statues of King George I. and King George II. be removed from their present sites and placed at the west end of the Senate House, one on the right hand and the other on the left of the Chancellor's chair, and that the site opposite the south doors of the Senate House be appropriated to the statue of the Prince Consort, the south doors being made to open so that this entrance may be used.

Dean M'Neile's Statue.—A very long and bitter discussion has taken place in the Liverpool Town Council as to a statue subscribed for by the admirers of Dean M'Neile, of Ripon, and formerly of Liverpool, which had been presented to the Corporation. The question was whether it should be erected in St. George's Hall. The matter was opposed by all the Roman Catholic members, on the ground that the bitter manner in which the dean had assailed their creed, slandered its members, and ridiculed its ministers, would cause them to regard the installation of the statue as a standing insult. The

motion was also opposed by some Dissenters and by some members of the Church of England, upon the ground that M'Neile enjoyed too local a fame, and was also the exponent of too sectional a portion of the Church of England to be entitled to the distinction. Other Dissenters supported the motion upon the hope that in future all local men of distinction, of whatever creed or party, would be entitled to have their memories similarly honoured. The motion to erect the statue was carried by thirty-six to sixteen.

Removal of the Thorneycroft Statue at Wolverhampton.—At a special meeting of the Town Council, held a fortnight ago, a resolution was unanimously agreed to, for the appointment of a deputation "to confer with the family of the late Mr. George Benjamin Thorneycroft, with a view of obtaining their sanction to the removal of the marble statue of the late Mr. Thorneycroft, the first Mayor of this Borough, from its present position in the cemetery grounds to the vestibule, or public hall, of the new Corporation buildings in North-street." The family expressed themselves perfectly willing to acquiesce in the proposal to remove the statue to the new town-hall, subject only to the condition that it should be removed under the superintendence of Mr. Thornycroft, by whom the statue was chiselled. We believe the Cemetery Company have the power to insist on the statue remaining where it is, but no objection is anticipated.

Memorials of the late Sir James Young Simpson, Bart.—The London and Edinburgh Committees have united their efforts, and resolved to issue a joint circular to the friends and admirers of Sir James Simpson. The form of the memorial agreed upon is:—1st, a monument and statue in Edinburgh; 2nd, a marble bust in Westminster Abbey; 3rd, a hospital in Edinburgh for the diseases of women, constructed on those principles which Sir James so often and so clearly enforced; 4th, similar hospitals in London and Dublin, should sufficient funds be obtained.

Monument to the late Robert Scott Lauder, R.S.A.—The pupils of this distinguished Scottish artist, who during ten years taught the students of art in the School of Design in Edinburgh, have just erected to his memory a monument in the Warriston Cemetery, at Edinburgh. The monument, which has been executed and designed by Mr. John Hutchinson, R.S.A., is a monolith of Sicilian marble, in which, in a circular panel, is inserted an alto-relievo head of Mr. Lauder, chiselled in the finest statuary marble. Among his pupils were Herdman, Orchardson, the Burrs, Cameron, Petty, Graham, M'Whirter, Hutchison, &c. The monument has been inaugurated in the presence of the subscribers, who have handed it over to the care of Dr. Lauder, representative of the family.

CHURCH-BUILDING NEWS.

Hull.—The newly-erected church of St. Matthew, Anlaby-road, Hull, has been consecrated by the Archbishop of York. The style of architecture is Gothic of the thirteenth century. The building comprises clearstoried nave, with north and south aisles and a chancel, terminating with semi octagonal apse, having organ-chamber on the north side, and clergy and choir vestries on the south side. Under these is placed the heating chamber. At the east end of the north aisle is placed the tower with spire, and the communication to the ringing-chamber and belfry-stages is by a spiral stone staircase. The entrances to the church are by the north porch and west doorway. There is also a separate entrance to the vestries. The church is constructed of brick and plastered internally. The windows of the aisles and chancel are of three lights, with pierced traceried heads. The clearstory has tripled lights, with pierced and cusped heads, and there are circular traceried windows to the clearstory of the chancel. The west end has coupled two-light traceried windows, with large traceried rose-window over. The ringing-chamber stage of the tower is arcaded and lighted by long narrow openings. The belfry-stage has coupled two-light openings on each face, with stone shafts and traceried heads. The spire has stone lucarnes on each face, with shafts with traceried canopies, surmounted by crosses. The walls are faced externally with white brick relieved by red brick arches and bands, and chamfered and moulded brick jambs and arches to the several windows, doors, &c. The spire (not yet erected) is to be constructed of brick. The whole of the stone intended to be carved is left in block. The roofs throughout are slated, and surmounted with red earthenware ridge cresting. They are open-timbered throughout with framed rafters, covered with wrought boarding. The chancel roof is boarded on the under side of the rafters, and divided into panels by chamfered ribs. There are wood floors to the organ-chamber and vestry, and under all the seating. The seats are open benches, with solid ends cut ornamentally. Wrought-iron gates are to be placed at the entrance porch and to the churchyard from the Anlaby-road. The church is heated by means of hot air. The internal dimensions of the building are:—Length, 123 ft. 3 in.; width, 54 ft.; height from nave floor to ridge, 52 ft. 6 in. The height of the tower and spire when completed will be 157 ft. Accommodation is provided in the church for over 800 adults, and the total cost of the building, including fence walling, is 4,500*l*. Mr. C. Hutchinson, Hull, was the contractor for the brickwork, masonry, plastering, carpenter, joiner, and painters' work; Messrs. Pycock & Sons, Leeds, have done the slaters' work; Mr. G. Wilson, Leeds, the plumbing and glazing; and Messrs. Heaps & Robinson, Leeds, have fixed the ironwork and heating apparatus. A bell supplied by Messrs. Mears & Co., London, has been fixed by Mr. T. Walker, of Lowgate, for use until the new peal of six can be obtained. A small organ for temporary use has been obtained of Messrs. Forster & Andrews. The architects were Messrs. Adams & Kelly, of Leeds. The estimated cost of the design was 4,500*l*. The site besides was valued at 1,500*l*.

Weston-super-Mare. — The parish church of Worle, Weston-super-Mare, having been restored under the superintendence of Mr. Norton, was re-opened on All Saints' Day. Open benches of stained deal have taken the places of high pews, the gallery has been dispensed with, and the twisted pillars and falling arches have been set in proper order. An arcade of arches divides the nave from the north aisle, and on the north side of the chancel a chapel has been erected, parclosed off by carved oak screens; this chapel serves as an organ-chamber and a vestry, besides providing accommodation for the school children. Two windows have been placed in the south side by the Rev. W. C. Fox, as a memorial of his grandparents. Throughout the restoration the many antiquities with which the edifice abounds have been preserved, and in making the necessary alterations many objects of interest have been discovered. The floors are laid with encaustic tiles. The altar dais is of Irish black marble, also inlaid with encaustic tiles. There is an oak reredos, at present unfinished, which is intended hereafter to contain sculptured subjects. At the top and base of the reredos is a carving, in sycamore wood, by the Misses Wodehouse (daughters of the late vicar). The roofs of the whole building are of open timber, with tracery principals and moulded cornices. The total cost of the work will exceed 1,500*l*.

Henley-on-Thames. — The re-opening of St. Nicholas Church, Remenham, has taken place. The works, which have occupied the whole of the preceding summer, consist of the addition of a south aisle, new porch and vestry, the removal of the galleries and of the whole of the interior fittings, which have been replaced by open sittings, the windows being filled with stained glass. The architect was Mr. Rowland Plumbe, of London, and the works were executed by Mr. Owthwaite, of Henley.

SCHOOL-BUILDING NEWS.

Darlington. — The foundation-stone of St. William's Roman Catholic Schools, to be erected on Albert-hill, Darlington, has been laid. The buildings have been designed in the Gothic style by Mr. Richard Robinson, of Darlington, architect, and comprise a school-room, 122 ft. long and 24 ft. wide; a class-room, 15 ft. by 12 ft. 9 in, with two large porches, and separate yards for boys and girls. The exteriors of the principal fronts are of red pressed bricks, interspersed with bands of black bricks, stone rills, and key-stones, whilst the interior will have white bricks for the lower part and plaster above, with an open-timbered roof, stained and varnished. The north front has ten coupled lancet windows, with a triple lancet window in the centre, over which rises a central gable, with projecting roof, supported by wood brackets or stone corbels, and under this gable is a stone niche for the reception of a carved figure. The east and west fronts have large triple lights, the upper front filled in with stone tracery, intended to receive coloured or stained glass. These fronts have large projecting gables, supported by bold timber brackets or stone corbels, the whole finished with wood mouldings. In the centre of the school roof is a large bell-turret of open timber work, covered with a slated spire, surmounted by a gilded cross. There will also be ornamental iron crosses on each gable. The schools will be warmed by hot-water pipes, and ventilated by open windows, Sheringham's patent air-valves, and a ventilating turret in the roof. They will provide accommodation for 370 children, according to the recent requirement of 8 square feet for each child. The contractors are—for brick, stone, and plaster work, Messrs. Michael Watson & Son; for carpenter and joiners' work, Messrs. Laverick & Forster; for plumber and glaziers' work, Mr. T. Johnson, Tubwell-row; for slaters' work, Messrs. Wharton.

Friar Mere (near Oldham).—St. Thomas's new school buildings, situated in Delph, and in connexion with Friar Mere parish, were commenced in April last, and opened on October 6th. The plan of these schools is symmetrical, and is arranged in accordance with the regulations of the Committee of Council on Education. The entrance porches are placed at opposite ends of the building, and open into inclosed vestibules with lavatories attached. They give access to schoolrooms, which, by the removal of a moveable partition, can be thrown into one large room, 70 ft. in length. The class-rooms for both boys and girls form a projecting wing at the back, and open out from the large schoolrooms. The style of the building is Early Decorated Gothic. The principal front has a large centre gable, with three-light windows filled in with geometrical tracery, and surmounted by a belfry with angle shafts and canopies. The porches at each end have double pointed arches and gables, and between these and the centre are four three-light windows divided by stone mullions. The roof is hipped at each end of the building, and terminated with wrought-iron finials. The fall of the ground has permitted a terrace to be formed to the front, with centre flight of steps and entrance gateway. The play-grounds for boys and girls are placed at the back. In the interior the roof and timbers, which rest upon moulded stone corbels, are exposed, stained and varnished. The rooms are lined with pressed brickwork to the cill line. Abundant light has been given to every part, and ventilation has been provided. The contractors were Messrs. J. & J. Whitehead, masons, Marsden; Messrs. Gibson & Maude, joiners, Keighley; Mr. Charles Nelson, plumber, Bradford; Messrs. Hill & Nelson, slaters, Wakefield and Batley; Messrs. J. Whitehead & Son, plasterers and painters, Dob Cross, Saddleworth; and Mr. Edward Worrall, Uppermill, supplied the gas-fittings. The architects were Messrs. Lockwood & Mawson, of Bradford and London.

Kelsale.—The new school buildings which have been provided for Kelsale and Carlton have been opened. The building was formerly called the "Workhouse," and divided into several tenements. It was one of those large old-fashioned buildings which had more pretension to strength and stability than beauty of architecture, but which was capable of being converted into something more useful; and this has been done by taking out the old inside and replacing it with a new one. The outside has also had new roof, chimneys, windows, entrance-door, &c., and the result is that school accommodation for 200 or more children has been provided; comprising three large and lofty schoolrooms, for infants, boys, and girls, with separate class-rooms, offices, and apartments for a resident master and mistress. The works have been performed by Mr. Thomas Denny and Mr. William Kerridge, both of Kelsale, under the supervision of the architect, Mr. Norman Shaw, of London, at a cost of something like 600*l*.

Elland.—The new Wesleyan School building, which has been erected on the site of the old school, adjoining the chapel, in Eastgate, is now approaching completion, and although not yet ready for permanent occupation, it is opened. On the ground floor are a room intended to be used as a day school, 26 ft. by 27 ft.; two class-rooms, 11 ft. by 15 ft.; a lumber-room, 10 ft. by 11 ft.; and a kitchen, of the same size. The upper room, which will be used as a Sunday school, is 60 ft. long by 27 ft. wide. It is so arranged that it can be divided, so as to allow of four class-rooms, two at each end. The building has been erected by Mr. S. Ridehalgh, Mr. Joseph Hawk-

yard having done the woodwork, Mr. R. Brook the plastering, Mr. Aspinall the plumbing, and Mr. Edmunds, of Halifax, the hot-water apparatus. The total cost of the new building will be about 600*l*.

Blackburn.—The foundation stone of new schools for the Holy Trinity parish was laid on Saturday last, by Mr. Edward Kenworthy Hornby, M.P. The building is after the Early English, or Lancet, style, and will be of stone. Mr. James Bertwistle, of Blackburn, is the architect.

PROVINCIAL NEWS.

Halifax.—There is now in course of erection, upon a portion of the Stannary estate, a building for the use of the Dean Clough Library and its kindred institutions, the cost, according to the *Halifax Guardian*, being defrayed by the Crossley Company, Limited. The building, which stands opposite the old hall, has one front leading into the street leading to the hall, and another into Smith-street. It is in the Gothic style of architecture, freely treated. The façade to Smith-street presents, in the first story, eight two-light windows, with pointed ends. At the upper end is a flight of steps to lead to the large room in the second story, which is in course of formation. A dwelling-house is at the lower end of the building near Stannary. The other façade, fronting the hall, has seven windows similarly treated to the others, and a deeply-moulded doorway leading to the large room on the first floor. This room will be of good proportions, and is divided down the centre by a row of iron columns. When completed, the new building will be an ornament to the locality, and of great advantage to the societies for which it is built. On the rising ground on the same estate, and on a line with the room above alluded to, the Messrs. Crossley are erecting a large block of dwelling-houses for the foremen at the works. The houses form a block, in the Domestic Gothic style. —— Workmen have commenced excavating the foundation of a new building which is to serve as a County-court and Bankruptcy-court for Halifax. It stands on a site in the Clare Hall estate, between the recently-constructed upper portion of Prescott-street and St. John's-lane, the principal elevation being towards the cross street which joins these streets. At first sufficient ground was purchased for all the offices required, to be on one floor, and a design was prepared by Mr. Sowerby, of London, Government architect. But the authorities did not consent to that, and the site was reduced to one-half, and the building is to be in two stories. It is to be in the Italian style of architecture, and the entrance for the public, and the private entrance for the judge and registrars, will be from the new street. All the requisite offices for the high bailiff, clerks, and other officials, will be on the first floor. A broad staircase will lead to the court, which will be 50 ft. long, lofty, and well ventilated. There will be retiring-rooms for the judge, the registrars, and for counsel and attorneys. Two retiring-rooms will also be provided for the public; one for males, the other for females. There will also be a room for witnesses. Mr. Charnock is the builder.

West Bromwich.—At a recent meeting of the local commissioners, with reference to the proposed new public buildings, the General Purposes Committee reported that they had accepted the offer of the land on the lodge estate, as the proposed site for the market-hall, town-hall, and public baths, and had arranged for the agreement to be sent to the clerk as early as possible. That purchase made a total number of 7,555 yards. The committee found that to carry out the market-hall in all its completeness, it would be desirable to possess the adjoining land belonging to Mr. Prince, containing 1,509 yards, and they proposed to include that in the two acres which the Board had authorised them to purchase. Mr. Prince was willing to sell that land at 4*s.* 3*d.* per yard, and the committee asked for authority to accept the offer. The possession of that land will enable the market hall to be constructed in the form of a cross, its main front and entrance being in High-street, while the two wings will extend as arcades right and left to Lodge-road and Lombard-street. In view of the requirements of the future, the reasonable price at which the land was offered, and its increasing value in the market, the committee urged the Board to make the additional purchase, which would make the whole consist of 9,064 yards, at a cost of 2,400*l*. The following resolution was carried unanimously:—

"That the action of the General Purposes Committee, respecting Mr. Prince's land, be approved and adopted, and that the General Purposes Committee be instructed forthwith to complete such purchase, and be requested to prepare a general specification of the proposed buildings, including an approximate estimate of their cost, the mode of repayment of the loans necessary to carry out the work, and the general conditions on which it is proposed to invite competitors."

VARIORUM.

Some of the journals have mentioned that Mr. J. R. Planché is writing a poem on the Siege of Calais by Edward III. Mr. Planché, however, does not call it a poem, but a romance in rhyme. The work is completed, and now only lacks a publisher, which one may suppose will soon be forthcoming. We have read part of it in MS., and found the story particularly interesting,—the writing, as a matter of course, bright and elegant.——Mr. Edmund Sharpe has reprinted in pamphlet form, "Four Letters on Colour in Churches, on Walls and in Windows" (Spon & Co., Charing-cross), recently addressed by him to the *Builder*. Mr. Sharpe has several books in the press, including an illustrated Account of his Recent Archæological Tour amongst Lincolnshire Churches, and an elaborate work on the Ornament of the Transition Period.——Lovers of pottery and porcelain and their history, will be glad to hear that Mr. William Chaffers is engaged upon a work entitled "The Keramic Gallery," which will include 600 illustrations of rare and choice examples. The first part will appear, through Messrs. Chapman & Hall, next January.——The last published number (123) of "Proceedings of the Royal Society," which, by the way, is a model of its kind for promptness and good editing, includes an account of an elaborate series of "Experiments on the Action of Red Bordeaux Wine (Claret) on the Human Body," by Dr. E. A. Parkes, professor of Hygiene, in the Army Medical School, and Count Cyprian Wollowicz, M.D. We are bound to say that we find ourselves unable to deduce any particularly valuable results from the experiments, but more acute physiologists, doubtless, will do so.——Messrs. Thos. De la Rue & Co. have issued as usual a series of their "Red Letter Diary and Memorandum Book," in dainty shape for the ladies, shrined in Russia leather and satin, and in robuster case for the ruder sex, all, however, what may be termed, in the slang of the day, "good form."——No. 3 of the *Illustrated Review* is an advance on the previous numbers. If the work maintain this standard, it ought to obtain a circulation. The writer of an appreciative notice of Thomas Carlyle, the first article in the number, in setting forth Carlyle's works, oddly enough omits to mention his History of the French Revolution.——The "Belgravia Annual," edited by Miss Braddon, contains a number of stories and engraved illustrations, of more than average merit.——"Our Food: a useful Book for Boys and Girls. By Ellis A. Davidson. Cassell, Petter, & Galpin, London and New York." This little work follows out the course commenced by "Our Bodies," and two or three others; and it gives some elementary lessons in domestic economy. The instruction is to a certain extent technical. Some elementary lessons are given on the proper combinations and uses of the different kinds of food, intended chiefly for girls.——"The Eighteenth Annual Report to the Council of the City of Manchester on the Working of the Public Free Libraries, 1869-70. Manchester: Tubbs & Brook." During the past year the Manchester Free Libraries have been used by about 2,172,046 readers, of whom 412,489 have borrowed books to read at home; 73,799 are readers in the reference library, for the purpose of study and research; 103,077 are readers of books in the branch reading-rooms, and about 1,607,190 have availed themselves of the public news-rooms. The numbers include about 126,061 female readers, of whom 111,369 are borrowers, and about 14,692 are readers in the reading-rooms. The total number of volumes on the shelves is now 100,936, against 92,355 at the date of the last report. The number of volumes called for during the year has increased from 893,648 to 914,888; consisting of 477,544 vols. taken home by borrowers; 110,996 vols. issued for use in the branch reading-rooms; 115,388 vols. issued in the reference library; and 192,007 specifications of patents. As compared with the number of hours the libraries were open during the year, this large amount of issues represents an average of 260 vols. issued per hour, or 4½ vols. per minute. Practically, however, the largest demand takes place every day during certain hours, and it is found that the greatest number of issues during any of the busiest hours reaches the rate of about 1,000 vols. per hour, or 17 per minute! The largest proportion of the comparative increase is found to have been as follows:—8·56 per cent. in the class of science and art; 8·48 per cent. in the class of politics and commerce; 4·57 per cent. in the class of theology and philosophy; and 3·84 per cent. in the class of literature, poetry, and works of fiction.—— The *Academy* tells us that Mr. C. Hemans's third volume in continuation of his "Christianity and Ancient Art, and Christianity and Mediæval Art," is completed, and will be published in the spring. It will be more generally interesting than the preceding volumes, on account of recent occurrences in Rome.

Miscellanea.

Extensive Canal Scheme in the South of England.—A scheme for shortening the sea passage between the Bristol and English Channels by the construction of a great western maritime ship canal across the counties of Somerset and Devon has, it is said, been so far approved by practical men that it is expected to be almost immediately brought before the public in a matured state. The length of this canal is to be fifty-nine miles, its width at surface 124 ft., and at bottom 31 ft., and the depth 21 ft. This would enable all vessels of moderate draught to pass through from sea to sea. The canal, it is considered, would be of immense advantage for coal traffic from Wales.

Society of Arts.—The opening meeting of the 117th session of this society was held on Wednesday evening last, at the Society's House, and Lord H. G. Lennox, M.P. (the chairman of the council), delivered the opening address.

Roman Catholic Church-building at Dunedin, Otago, New Zealand.—An establishment called St. Joseph's Conventual Church, which is intended to partake of a monastic character, requiring to be enlarged, plans were prepared by Mr. John Millar, of Dunedin, architect. The present church will form the eastern nave, 65 ft. by 30 ft.; and there will be new north and south transepts, 85 ft. by 30 ft.; chancel, entirely devoted to the clergy, 25 ft. by 30 ft., continued westward, enclosing a sacristy, or priests' robing-room, 20 ft. by 12 ft., constructed upon the same level as the chancel. Internally, as well as externally, the church is cruciform. The extreme length of the main axis is 150 ft., and the minor axis 100 ft., whilst the extreme height from the ground level to the apex of roof is 40 ft. The exterior elevations are flanked with buttresses, antique mullioned windows, steeply pitched gables, the western one having octagonal turrets, enclosing stairs, ascending to the organ gallery, choristers' gallery, &c. Tenders having been called for, the following were made:—The church, if erected in brick with internal finish in cement, is estimated to cost, by Mr. William Dalziell, 2,700*l*.; Messrs. Wood & Dunn, 2,950*l*.; Messrs. Goodfellow & Hunter, 3,112*l*. If executed in brick, with internal finish in Oamaru stone:—Mr. William Dalziell, 3,000*l*.; Messrs. Wood & Dunn, 3,200*l*.; Messrs. Goodfellow & Hunter, 3,293*l*. If executed in Oamaru stone internally and externally, *i.e.*, the most desirable:—Mr. William Dalziell, 3,400*l*.; Messrs. Wood & Dunn, 3,680*l*.; Messrs. Goodfellow & Hunter, 3,680*l*.

Value of Land at Dundry.—Mr. G. S. Tricks, of the firm of Wm. Tricks, Son, & Wallop, offered for sale by auction, at the White Lion Hotel, Bristol, an estate at Dundry, consisting of 236 acres of arable and pasture land. The estate was first offered in one lot, and, being unsold, was then put up in eleven lots, in accordance with particulars. The following prices were realised:—Lot 1, 12a. 3r. 2p., 930*l*.; lot 2, 24a. 2r. 36p., 1,720*l*.; lot 3, 36a. 2r. 3p., 2,710*l*.; lot 5, 22a. 3r. 26p., 1,500*l*.; lot 6, 8a. 0r. 3p., 560*l*.; lot 7, 36a. 1r. 31p., 2,350*l*.; lot 11, 12a. 1r. 20p., 730*l*. Lots 4, 8, 9, and 10 were bought in. The property was freehold, and land-tax redeemed; and the title of the vendor was a registered one, under the provisions of the 25th & 26th Vic., cap. 53.

Instruction in Science and Art for Women.—The second of the opening course of lectures by Professor Huxley, in the season's programme of "instruction in science and art for women," was delivered in the lecture theatre of the South Kensington Museum, on Saturday morning last, to a numerous class. The elementary programme consists of three parts:—first, the opening course of lectures by Professor Huxley, on "Elementary Physiography;" secondly, a course of lectures, by Professor Guthrie, on "Elementary Physics and Chemistry;" and, thirdly, a course, by Professor Oliver, to "Illustrate the Phenomena of Life, whether physiological or morphological, by means of Botany." These are all morning lectures (eleven o'clock); the elementary course, or courses, being continued every Wednesday and Saturday, and the more advanced every Tuesday and Friday. The advanced course will consist of a series of lectures on physics (heat and light), by Professor Guthrie; and a series, by Professor Huxley, on human physiology. In addition to these morning lectures, there is an afternoon course, on Wednesdays, at half-past two o'clock. Mr. Pauer's first lecture of a course on the Pianoforte treated of instruments used before the invention of the pianoforte. *a*, the Clavicytherium; *b*, the Clavichord; *c*, the Clavicymbalum; *d*, the Virginal; *e*, the Spinet; , the Harpsichord.—The Pianoforte. Its difference from the previous instruments. State of Chamber Music of the Sixteenth and Seventeenth Centuries.—Composers mostly Organists. Chamber Music becoming popular. Its style.

Damage Done at Strasbourg.—A special correspondent of the *Times*, writing from Strasbourg, says:—Some of the claims which have been lodged are interesting, and, as proceeding from competent officials, may be regarded as authentic and legitimate. The architect of the cathedral estimates the damage it has sustained at 1,500,000f., a sum which seems enormous, although the fabric is far more injured than might be concluded from a superficial examination. The fabric of the Bibliothèque is set down at 200,000f.; a valuation of its contents, which, for the history of the province, are simply irreparable, is modestly declined. The Picture Gallery is valued at 250,000f. the edifice, and 426,700f. the contents; the Theatre, 900,000f.; the Palais de Justice, 530,000f.; the Prefecture, 864,000f.; the Hôtel de Ville, 100,000f. The administration of the Quays and Bridges claim 419,387f. The Citadel claim is split up into nearly a hundred distinct reclamations, its church figuring for 45,000f. for the fabric, and 60,000f. for the fittings. The Gasworks, 86,000f. —a modest claim. The gasometers were destroyed, and for three or four weeks to come Strasbourg will continue without gas. The number of houses absolutely destroyed is about 300, but so many have been so greatly shattered internally as to require rebuilding that this is an under-estimate.

Architectural Remains in India.—Mr. J. Burgess, the editor of two albums of architectural remains, chiefly of the temples of the Jainas, or Shrawaks, at Palitana and Girnar, has submitted to the Bombay Government an elaborate report suggesting plans for a thorough survey of the architectural and archæological remains throughout the whole of the central area of India. The lists of remains appended to the memorandum enumerate upwards of 800 temples and other antiquities.

Railway Traffic Returns.—The traffic receipts of the railways in the United Kingdom for the week ending November 11th, 1870, upon a mileage of 13,771, amounted to 813,915*l.*, being equal to 59*l.* 2*s.* per mile. For the corresponding week of last year the receipts were 788,052*l.*, the number of miles open 13,544, or 58*l.* 4*s.* per mile. A comparison of the two weeks shows an increase in the aggregate receipts, of 25,863*l.*, and in the number of miles open, of 227.

The late Lady East as an Artist.—A painted glass window has been placed in the hall of Bourton House, Moreton-in-the-Marsh, in memory of the late Lady East. The window, which, besides twenty panels of painted border, comprises fifteen panels representing the various armorial bearings of Sir James East's family for the last 200 years, was painted by Lady East for the town residence.

Watford Union Chapel.—The hot-water apparatus for warming this chapel was set up by Messrs. J. Jones & Sons, of Bankside.

Wolverhampton. — Two churches, in St. Peter's, Wolverhampton, have been consecrated, the first by the bishop of the diocese, and the second by the Right Rev. Dr. Abraham, late bishop of Wellington, his coadjutor. The names of the churches are St. Andrew's and Christ Church, and both are entirely free. Neither of them is quite complete, and there is about 1,000*l.* of debt upon the existing buildings. The part of St. Peter's parish in which these two churches stand will soon be formed into an ecclesiastical district, under the title of St. Andrew's.

Royal Academy.—A course of lectures "On Architecture" is announced to be delivered by Professor G. G. Scott, R.A., on the 16th of February, 2nd and 16th of March. We are glad to be able to say that Mr. Scott is better than he was. While inspecting works at Chester Cathedral he was seized with illness (an affection of the heart), and was conveyed with difficulty to the Deanery, where he has lain ever since, now nearly a month.

A Carved Casket.—The casket (containing the documents relating to the inauguration of H. R. H. Prince Christian of Schleswig-Holstein, as Lord High Steward of the Borough of New Windsor) was of oak from Windsor Forest, carved by Messrs. Halliday, Brothers, from a design in the style of the Perpendicular Period, by Mr. A. Y. Nutt, of the Office of Works, Windsor Castle.

Jack-of-all-Trades.—Sir: Some of the auctioneers seem bent on doing every one's business as well as their own. Here is an advertisement (with a difference) from a recent number of the *Times*:—

"MESSRS. PHEASANT & CO., auctioneers, estate and house agents, architects, surveyors, and accountants, valuers of timber, agricultural covenants, copyholds for enfranchisement, railway claims, clerical and general dilapidations, and for administration.—Dearside, London."

Y.

Management of London.—Once more the prospect of a municipal government for the metropolis fades away. Mr. Bruce has taken back his implied promise to deal with the subject next session, and Londoners who long for a government must be content to push their expectations forward to 1872.

Liverpool Architectural Society.—The meeting held on the 16th inst. was occupied with a continuation of a paper by Mr. H. H. Statham, jun., titled, "Notes of a Short Tour among the Lincolnshire Churches," adjourned from last meeting. It was illustrated by a number of sketches made by the writer.

Borough Surveyor of Kingston-on-Thames.—The surveyor, Mr. Slagg, has resigned his office. It is understood that he will remain in Kingston for private business. A committee of the Corporation is charged with the election of his successor.

Borough Surveyor, Barrow-in-Furness. Mr. Howard Evans, assistant surveyor to Salford corporation, has been appointed borough surveyor to the corporation of Barrow-in-Furness.

Societies. — The Royal Society and the Society of Antiquaries severally held their first meeting for the session on Thursday evening, the 17th inst.

Institute of British Architects.—At the meeting on Monday next (21st), Mr. B. Ferrey will read a paper "On the West Front of Wells Cathedral."

Society of Painters in Water Colours.—The private view of the Winter Exhibition of sketches and studies is fixed for Saturday, the 26th inst.

TENDERS.

For new sewers, for the Enfield Local Board:—

Pearson	£1,999 0 0
Marshall	1,480 0 0
Semell	1,414 0 0
Haynes	1,400 0 0
Riley	1,363 0 0
Patman	1,293 0 0
Anderson	1,263 0 0
Standen	1,250 0 0
Hayward	1,199 0 0
Simson	1,197 0 0
Carter	1,189 10 0
Kelly	1,189 0 0
Pizzey	1,177 0 0
Hubberd	1,139 0 0
Bayes	1,110 0 0
Bugbird	1,102 1 0

For enlarging factory, Blackfriars-road. Messrs. Tress & Innes, architects:—

Fish	£1,999 0 0
Conder (accepted)	1,555 0 0

For re-building No. 50, Bow-lane. Messrs. Tress & Innes, architects:—

Fish	£1,776 0 0
Macey	1,677 0 0
Browne & Robinson	1,641 0 0
Lawrence & Sons	1,620 0 0
J. & F. Coleman	1,589 0 0
Ramsey (accepted)	1,437 0 0

For the third block of cottages (three in number), for the Bromley Cottage Improvement Company, Limited. Mr. George Truefitt, architect:—

Payne & Balding	£450 0 0
Brown	375 0 0
Jayes (accepted)	339 10 0
Harper & Spooner	275 0 0

For warehouse, Radsworth-street, Baldwin-street, City-road. Mr. John Collier, architect:—

Moore & Grainger (accepted)	£2,040 18 8

For the erection of offices in King-street, Gravesend, for Mr. Francis Southgate. Quantities by Mr. J. Scott. Mr. Thos. Chas. Sorby, architect:—

Gould	£1,249 0 0
Cobham	1,230 0 0
Blake	1,137 10 0
Hill & Sons	1,086 0 0

For completing houses, for Mr. Evans, at Selhurst. Mr. Thos. W. Willis, architect:—

Wren (accepted)	£1,252 0 0

For the erection of four shops and dwelling-house, at Leytonstone, Essex. Messrs. Simon & Archer, architects:—

Scholtes	£1,600 0 0

For drainage works, Deal, Kent. Mr. Edward W. Fry, surveyor. Quantities supplied:—

Neave	£1,375 0 0
W. & G. Denne	1,195 0 0
Woodcock	1,147 0 0
Chamberlain	1,145 0 0
Cottew	1,133 0 0
Mathews	1,121 0 0
Coleman (accepted)	1,121 0 0

For the restoration of Hingham Church, Norfolk. First contract. Mr. James K. Colling, architects:—

Luff	£2,198 0 0
Spaul	1,999 0 0
Brown	1,836 0 0
Hubbard	1,749 0 0
Tooley	1,680 0 0
Cornish & Lacey (accepted)	1,647 0 0

For the United Methodist Free Church and Schools, Wellington-road, Toxteth Park, Liverpool. Mr. W. J. Mason, architect. Quantities by Mr. Northcroft, surveyor:—

Forde	£3,398 5 0
Potter	3,320 0 0
Tomkinson	3,050 0 0
Bateman	2,999 0 0
Cheetham	2,998 0 0
Haigh & Co.	2,997 0 0
Rome	2,964 0 0
Hargreaves & Grindrod	2,955 0 0
Industrial Building Co.	2,900 0 0
Nicholson & Ayre	2,889 0 0
Urmson	2,808 0 0
Bridge (accepted)	2,770 0 0

For the erection of villa residence, at Claughton, Birkenhead. Mr. Lewis Horsblower, architect. Quantities by Mr. George Northcroft, surveyor:—

J. & W. Walker	£4,765 0 0
Nicholson & Ayre	4,594 0 0
Fisher	4,566 0 0
Haigh & Co.	4,533 0 0
Blakeley	4,450 0 0
Industrial Building Co.	4,385 0 0
Urmson	4,375 0 0
Forde (accepted)	4,017 0 0

For the erection of schools, Church-road, Brixton. Mr. Joseph Gale, architect:—

Kirk	£3,594 0 0
Downs	3,493 0 0
Colls	3,424 0 0
Gammon	3,375 0 0
Little	3,293 0 0
Browne & Robinson	3,282 0 0
Henshaw	3,243 0 0
Rider	3,2 8 0 0
Sewell	3,177 0 0
D. King & Son	3,130 0 0
Shepherd	2,990 0 0

For the restoration of Coningsby Church, Lincolnshire. Messrs. T. C. Hine & Son, architects:—

	Nave & Aisles.	Chancel.
Hodson & Facon	£1,562	£904
Stevenson & Weston	1,417	853
Worth	1,314	908
S. & W. Pattinson	1,343	877
Hasmiss	1,277	906
C. & W. B. Millton	1,174	825
White & Wood	1,109	825
Otter & Binns	1,128	787
Walter & Hensman	1,140	835
Belton	1,106	739
Thompson	1,008	763
Otter & Elsey	1,115	660
Knight	979	765
Johnson	1,0 1	710
Young (accepted)	905	645

For making up Osborne-road, for the Acton Local Board:—

Blackmore	£629 0 0
Hare	451 0 0
Pizzey	375 0 0
Chalkers	359 0 0
Porter	336 0 0
Simson	295 0 0

For additions to workhouse, in Poland-street, Oxford-street, for the guardians of Westminster Union. Mr. Wm. Lee, architect. Quantities supplied by Messrs. Linsdell & Giffard :—

Saul	£15,039	0	0
Foxley	14,960	0	0
Howard	14,850	0	0
Mann	14,585	0	0
Yates	14,548	0	0
Henshaw	14,143	0	0
Crockett	13,980	0	0
Lathey, Bros.	13,923	0	0
Hart	13,850	0	0
Eaton & Chapman	13,810	0	0
Nightingale	13,632	0	0
Scrivener & White	13,565	0	0
Higgs	13,541	0	0
Markwick & Thurgood	13,462	0	0
F. & F. J. Wood	13,350	0	0
Wright, Bros., & Goodchild	12,890	0	0
Hill, Keddell, & Waldram*	12,773	0	0

* Accepted.

For building a tower with spire to Wraysbury Church :—

Nightingale	£3,323	0	0
Mole	1,667	0	0
Price	1,665	0	0
Emerson	1,579	0	0
Taylor	1,481	0	0
Woodward	1,420	0	0
Kelly	1,399	0	0
Gibson, Bros.	1,340	0	0
Fassnidge & Son	1,277	0	0
Harley	1,275	0	0
Reavell	1,250	0	0
Wright, Bros., & Goodchild*	950	0	0

* Accepted.

For sewers, &c., at Bow Common, Turner's-road, and Robert-street, for the Vestry of the Hamlet of Mile-end Old Town. Mr. Knight, surveyor :—

Vicards & Care	£1,298	0	0
Still	1,170	0	0
Hare	1,110	14	0
Webster	1,050	0	0
Potter	998	0	0
Morris	995	0	0
Irons	955	0	0
Killingbrook & Radley	899	10	0
Wigmore	867	10	0
Pearson	839	0	0
Hubbard	779	0	0

For house and shop, on the Marquis of Westminster's estate, Oxford-street, for Mr. Linscott. Messrs. Tolley & Dale, architects :—

Ennor	£4,978	0	0
Brass	4,932	0	0
Sewell	4,882	0	0
Howard	4,394	0	0
Conder	4,293	0	0

For house and shop, on the Marquis of Westminster's estate, Oxford-street, for Mr. Wm. Thompson. Messrs. Tolley & Dale, architects :—

Brass	£3,920	0	0
Ennor	3,889	0	0
Sewell	3,752	0	0
Conder	3,686	0	0
Howard	3,656	0	0

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All statements of facts, lists of Tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication.

NOTE.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

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E. & F. N. SPON, 48, Charing-cross.

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1. Three Plates of the CHAIR of St. PETER, preserved at Rome; with Letterpress by the late A. ASHPITEL, Esq. F.S.A. and A. NESBITT, Esq. F.S.A. Fol. 1870. Price 9s. 6d.; to Fellows, 6s.
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NO MORE LEAKAGE in GLASS ROOFS.—WANTED, TEMPORARY ASSISTANCE to enable the Advertiser to pay the preliminary fees for securing an INVENTION to prevent the water coming through the laps of glass in skylights, or glass roofs, rendering leakage impossible, at the same time hiding the joint on the inside. The cost will not exceed 1d. per foot super. more than the ordinary lights, and can be made either in wood or metal. The advertiser is willing to deposit the letters patent as security, and to equally share the profits.—Address, J. B. 99, Brocknock-road, Camden-road.

PARTNERSHIP.—A Gentleman educated for the profession desires to PURCHASE a PARTNERSHIP with an ARCHITECT in good practice, who contemplates retiring after a few years.—Address, X. Y. Post-office, Carlisle.

CLERK of WORKS WANTED.—KIDDERMINSTER LOCAL BOARD.—The Local Board of Kidderminster require the services of an experienced CLERK of WORKS, to act under the direction of their Engineer in superintending the Construction of the Sewerage and Waterworks. Applicants to state their qualification, age, and amount of remuneration expected, and give references, and forward them, under cover, to the Clerk to the Local Board of Kidderminster, addressed to the Chairman of the Public Works Committee, endorsed "Application for Situation of Clerk of Works." The application to be sent in on or before MONDAY, the 28th inst.
Dated 16th November, 1870.
JAMES MORTON, Clerk to the Local Board.
Persons canvassing will not be eligible.

GAS and WATER MANAGER.—The Widnes Local Board require the SERVICES of a Person thoroughly capable of undertaking the MANAGEMENT of their GAS-WORKS and WATER-WORKS. The person appointed will be required to devote his whole time to the service of the Board. Salary, 180l. per annum.—Applications, accompanied by testimonials, in sealed cover, endorsed "Gas and Water Works Manager," to be forwarded to the Chairman of the Local Board, Widnes, near Warrington, on or before the 10th DECEMBER next.
THOMAS BRASLEY, Law Clerk.
St. Helen's, 10th November, 1870.

WANTED, a GENTLEMAN, to introduce a new STOVE, and obtain orders upon commission. A small salary will be given.—Address, 500, Office of "The Builder."

WANTED, immediately, an ASSISTANT, thoroughly competent to Make Surveys, Take Levels, and has some knowledge of building.—Apply by letter to A. B. C. Post-office, Derby, stating terms and references.

WANTED, by an ARCHITECT and SURVEYOR, of 16 years' experience, EMPLOYMENT for the whole or part of his time.—Address, 642, Office of "The Builder."

WANTED, in a Drawing Office, a practical MAN, who can make drawings and estimates of iron and lead work, and take off quantities. He must be a thoroughly competent man.—Apply to Messrs. WALKER & EMLEY, Neville Iron-works, Newcastle-on-Tyne.

WANTED, a competent SAW-MILL FOREMAN, to manage and work at sawing, planing, and moulding machinery. No one without good experience need apply. State wages required and references to J. W. STANLEY & CO. Timber Merchants, Wisbeach.

WANTED, by a first-rate ARCHITECTURAL DRAUGHTSMAN, a RE-ENGAGEMENT. Can prepare working, detail, competition, and perspective drawings.—Address, No. 980, Office of "The Builder."

TO MASTER PLUMBERS, &c.
WANTED, by a PLUMBER, a SITUATION. Can do plain sine-work or gasfitting, and willing to fill up time at other branches. Town or country. Good reference.—Address, C. B. 28, King's-cross-road, W.C.

TO ARCHITECTS AND OTHERS.
WANTED by an experienced DRAUGHTSMAN. EMPLOYMENT. Accustomed to prepare finished, working, and detail drawings, to design, &c. and is well up in construction.—Address, X. Y. Z. 79, Great Percy-street, Claremont-square, Pentonville.

TO SMITHS, &c.
WANTED, by a good Workman, a SITUATION as above. Good reference.—Apply to S. C. 42, Nort h-street, Pentonville, N.

TO PLUMBERS AND HOUSE DECORATORS.
WANTED, by a THREE-BRANCH HAND, a constant SITUATION.—Address, R. F. 8, Chapel-place, Great Ilford, Essex.

To CARPENTERS, &c.
WANTED, by a Young Man, a SITUATION as IMPROVER. Would require but a moderate salary.—Address, W. W. 34, Upper Carlisle-street, Edgware-road, W.

TO TIMBER MERCHANTS OR OTHERS.
WANTED, by a Young Man, a JOB, to Work a Moulding Machine, and Saw-Sharpening Machine. Gets own irons up. Present situation eight years.—Apply, W. D. 34, Payne-street, Islington, London.

TO MASTER BUILDERS AND PLUMBERS.
WANTED, by a Young Man, a Constant SITUATION as PLUMBER, or on a Job. Can do painting or glazing if required, or make himself generally useful. Good references if required.—Address, G. L. Plumber, No. 21, Woodchester-street, Harrow-road, Paddington.

WANTED, by a good PLUMBER, a SITUATION or JOB. Handy at gas and hot-water work. Town or country. Good reference.—Address, W. R. 6, Charles-street, Kensington-square, W.

TO CIVIL ENGINEERS AND SURVEYORS.
WANTED, by a first class ASSISTANT, who will be shortly disengaged, a RE-ENGAGEMENT. Ten years' practical experience.—Address, F. B. care of Porter, No. 7, Westminster-chambers, Victoria-street.

TO ARCHITECTS.
WANTED, by a first-rate GOTHIC DRAUGHTSMAN, a RE-ENGAGEMENT. Is well up in design and detail, and has a thorough knowledge of perspective. Excellent reference.—Address, H. G 30, Clipstone street, Portsoy-square, W.

TO BUILDERS, SHOPFITTERS, AND OTHERS.
WANTED, by a steady, energetic Young Man, a Joiner, of good abilities, a SITUATION in a good Shop. Has been used to shop fitting and jobbing. Can do French polishing. Wages, 24s. A constancy.—Address, A. J. Francis's, Post-office, Wandsworth-road.

WANTED, by a practical Man, to LOOK AFTER a BUSINESS in the Building Trade, or any place where trust is required, or to collect rents, or to superintend general repairs, or estimate for work, or willing to assist in the business if required.—Address (by letter), BETA, Post-office, Buckhurst-hill, Essex.

TO PLUMBERS, BUILDERS, AND OTHERS.
WANTED, by a Married Man, EMPLOYMENT as PLUMBER, GASFITTER, and PLAIN ZINC-WORKER. Thoroughly understands pump, bath, and closet work, repairing, &c. State wages given. Good reference.—Address, PLUMBER, 23, Mildmay-street, Ball's-pond, Islington, N.

TO ARCHITECTS AND BUILDERS.
WANTED, by a thoroughly practical CLERK of WORKS, a RE-ENGAGEMENT or SITUATION as GENERAL MANAGING FOREMAN. Competent to prepare plans, working and detail drawings, measure up work, and take out quantities.—Address, W. D. 43, Grafton-road, Kentish-town, N.W.

TO BUILDERS AND IRONMONGERS.
WANTED, by a thoroughly practical Workman, EMPLOYMENT, as HOT-WATER, STEAM, GAS, and HOT-AIR APPARATUS FITTER, of any description, for warming buildings, Bakehouse, cooking, &c. Day work or piece, or as an outdoor Working Foreman. Will up in taking orders.—C. W. No. 8, Carburton-street, Fitzroy-square, W.

WANTED, EMPLOYMENT, as a good JOBBING PLUMBER, ZINCWORKER, and GASFITTER. Can fill up his time in painting and glazing.—Address, J. R. 6 Ebenezer-place, Blue Anchor-road, Bermondsey.

WANTED, EMPLOYMENT, by a Carpenter and Joiner. Age 37. Used to all classes of work, in town and country. No objection to a factory. Constancy chief object.—Address, CARPENTER, Clara Cottage, Leytonstone, E.

WANTED, EMPLOYMENT, by a respectable YOUNG MAN, aged 34, as PLUMBER, PAINTER, GLAZIER, and PLAIN ZINCWORKER, or as a General Hand in Jobbing Work. Is able and willing to make himself generally useful in jobbing work. Wages no object.—Address, H. H. 73, Milton-street, Dorset-square, N.W.

TO BUILDERS AND HOUSE AGENTS.
WANTED, EMPLOYMENT, by an experienced, active Man, aged 32. Used to general alterations and house repairs, or shop, office, or warehouse fittings, &c.; or as TIMEKEEPER (carpenter and joiner by trade). Very low wages accepted.—Address, L. M. at Mrs. Goulding's, 13, Fieldgate-street, Whitechapel, E.

TO BELLHANGERS, GASFITTERS, &c.
WANTED, a SITUATION, by a Young Man in the above line, in town or country.—Address, J. WOODWARD, 4, New-end, Hampstead.

WANTED, a SITUATION, by a Young MAN, as GRAINER and MARBLER, or GENERAL HAND in a Jobbing Shop. Town or country.—Address, A. W. Burt's Coffee-house, 391, Euston-road.

TO BUILDERS.
WANTED, a SITUATION, as WORKING FOREMAN, by an experienced Man in stairs, shop-fronts, sashes and frames, boxing shutters, and the general work of a building. Has been accustomed to machinery. Can work a general joiner if required.—Address, SMITHLY, 19, New-street, Kennington Park-road.

TO BUILDERS, PLUMBERS, AND DECORATORS.
WANTED, a SITUATION, by a steady, sober Man, as a thoroughly good practical PLUMBER, PAINTER, LEAD or SASH GLAZIER, in all its branches. Is a good grainer and decorator. Patterns of graining can be seen, if required. Good reference given. Wages moderate.—Address, W. X. 14, Richmond-street, Maida-hill.

TO MASONS.

WANTED, an ENGAGEMENT, as IMPROVER. Was in last situation four years. Good reference given. Wages 24s. per week.—Address, W. J. S. 22, Aldenham-street, St. Pancras-road, N.W.

TO ARCHITECTS.

WANTED, an ENGAGEMENT, as ASSISTANT. Accustomed to prepare finished, working, and detail drawings, specifications, to design, survey, &c. Is well up in construction, and has had the management of an office for some time.—Address, ARCHITECT, Mr. Robertson, 95, Upper-street, Islington.

TO BUILDERS, &c.

WANTED, a RE-ENGAGEMENT as CLERK, &c. Aged 22.—Address, No. 578, Office of "The Builder."

TO ARCHITECTS AND SURVEYORS.

WANTED, a RE-ENGAGEMENT, by a good GENERAL ASSISTANT. Good references.—Address, S. E. T. 48, Foley-street, W.

WANTED, a RE-ENGAGEMENT, by a thoroughly practical GENERAL OUT-DOOR FOREMAN. Carpenter and joiner by trade. First-class references.—Address, 598, Office of "The Builder."

WANTED, a RE-ENGAGEMENT, as GENERAL or WORKING FOREMAN of CARPENTERS and JOINERS. Good references as to ability. Age 33. No objection to the country.—Address, N. J. 24, Grange-terrace, Bine Anchor-road, Bermondsey.

TO ARCHITECTS, SURVEYORS, AND BUILDERS.

WANTED, an ENGAGEMENT, temporary, or three or four days a week, in town or country, by a first-class Quantity Taker, Measurer, and Draughtsman. Aged 30. First-class testimonials. Terms, 12s. 6d. per day.—Address, A. B. Z. News-rooms, 24, King William-street, Strand.

TO ARCHITECTS.

WANTED, a RE-ENGAGEMENT, as JUNIOR ASSISTANT, by a neat and efficient DRAUGHTSMAN, who has had four years' experience, and is well up in the general routine of an office. Excellent references, &c.—Address, A. Y. Z. 9, Crawford-street, Camberwell.

TO BUILDERS, CONTRACTORS, AND DECORATORS.

WANTED, an ENGAGEMENT, by an energetic Young Man, as GENERAL ASSISTANT, PRIME COST CLERK. Used to measuring, keeping time, and charge of men and works, at home or abroad. Has a practical knowledge of every branch of the trade. Aged 29. Salary moderate.—Address, W. Y. 1, Stamford-street, Kingsland, N.

TO BUILDERS AND OTHERS.

WANTED, by a thoroughly efficient and energetic Shop Foreman of Joiners, a RE-ENGAGEMENT, either as SHOP or GENERAL FOREMAN. Is a good draughtsman, also accustomed to machinery. Aged 42.—Address, T. E. 30, Sussex-street, Warwick-square, Pimlico.

WANTED, by the Advertiser, a SITUATION, in a Builder's Office. Competent to measure work, estimate, &c.; or as Clerk in a Brick, Lime, or Stone Merchant's office.—Address, 612, Office of "The Builder."

TO ARCHITECTS, &c.

WANTED, by the Advertiser (a neat and quick DRAUGHTSMAN, of upwards of five years' experience), a RE-ENGAGEMENT in an Architect's office.—Address, W. D. care of Mr. Durham, 103, Manor-street, Chelsea, S.W.

WANTED, by the Advertiser, aged 31, an ENGAGEMENT with a Builder. Well conversant with the details of the business, and good accountant. Has a connexion, which might be made mutually advantageous.—Address, B. Y. care of Thomas Fleming, Esq. 7, Denbigh-place, S.W.

TO LIME MERCHANTS, WHARFINGERS, AND OTHERS.

WANTED, by the Advertiser, a SITUATION as CLERK. Has had experience, having been wharf clerk at a lime, cement, brick, and drain-pipe wharf in London. Can produce good reference. Aged 27.—Address, H. P. Wharf, Wendover, Bucks.

TO ARCHITECTS AND BUILDERS.

WANTED, by the Advertiser (aged 30), a SITUATION as CLERK of WORKS or FOREMAN. Has a thorough knowledge of the various branches of the business. Eight years' reference, personal, in London, if required.—Address, M. A. 70, Buckingham road, De Beauvoir-town, N.

TO BUILDERS, PLUMBERS, ESTATE AGENTS, &c.

WANTED, by the Advertiser, a SITUATION, in town or country, as practical PLUMBER, GASFITTER, BATH and HOT-WATER FITTER, in all its branches. Good references.—Address, A. LISTER, Plumber, 3, Artichoke-place, Church-street, Camberwell.

TO NOBLEMEN, GENTLEMEN, MASTER BUILDERS, PLUMBERS, PAINTERS, GLAZIERS, &c.

WANTED, by the Advertiser, a SITUATION, as THREE-BRANCH HAND. Can do gas fitting and zinc-work, paperhanging and distempering; understands country well-work and lead glazing. A total abstainer.—Address, 601, Office of "The Builder."

AN experienced THREE-BRANCH HAND (Plumber, Painter, and Glazier) is in WANT of a SITUATION.—Address, PLUMBER, 34, Raphael-street, Knightsbridge.

TO PLUMBERS AND BUILDERS.

A GOOD PLUMBER is in WANT of a SITUATION or JOB. No objection to the country.—Address, A. B. 10, The Terrace, Kensington, W.

A STAIRCASE and HANDRAIL HAND WANTS EMPLOYMENT, by day or piece. No objection to joiner's work. Town or country.—Address, E. C. Goding-street, Vauxhall-gardens.

TO BUILDERS, DECORATORS, &c.

A SITUATION WANTED, by a practical PAINTER. First-class pencil hand. Can also do graining, paperhanging, and measuring of painters' work.—Address, D. G. care of Mr. Giles, 59, Roxburgh-street, Greenock.

A REALLY practical Man WANTS a RE-ENGAGEMENT as FOREMAN or CLERK. Has just finished some large jobs. Can prepare a set of plans, take out quantities, &c.—Address, CARPENTER, Mr. Geoffery's, 2, Pidgeon-yard, Ilford-road, Stratford, E.

TO BUILDERS, PLUMBERS, &c.

A YOUNG MAN, aged 25, whose last employer has retired from business, requires a SITUATION as BOOK, TIME, or STORE KEEPER. Is a practical plumber, and possesses certificates of the Society of Arts and Government classes. Excellent references.—Address, G. L. care of Mrs. Hart, Bury-st. Edmunds.

A CLERK of WORKS desires an ENGAGEMENT. Excellent testimonials and references.—Address, No. 640, Office of "The Builder."

TO ARCHITECTS AND SURVEYORS.

AN experienced MANAGING ASSISTANT desires a RE-ENGAGEMENT, temporary or otherwise. Address, A. X. Y. Post-office, 116, Camden-road, N.W.

AN ARCHITECTURAL DRAUGHTSMAN offers his SERVICES in making perspective, detail, and working drawings, &c. Terms moderate.—Address, G. L. care of Mr. Ingram, 23 King-street, S.W.

AN ARCHITECTURAL DRAUGHTSMAN, well up in Gothic and other contract and working drawings, desires a RE-ENGAGEMENT. Good references.—Address, DEL, 55, Conduit-street, Leicester.

AN Architectural DRAUGHTSMAN is DISENGAGED. Perspectives, competition, and working drawings and details. First-class references in London and country, England or abroad.—Address, J. B. R. Rhodes House, Cheetham-hill, Manchester.

TO ARCHITECTS, SURVEYORS, AND OTHERS.

A FIRST-CLASS DRAUGHTSMAN and GENERAL ASSISTANT desires a RE-ENGAGEMENT in a London Office. Temporary or otherwise. Terms moderate.—Address, A. C. 1, Dunlace-road, Lower Clapton.

TO ARCHITECTS AND SURVEYORS.

A NEAT and expeditious DRAUGHTSMAN requires a RE-ENGAGEMENT in London, permanent or temporary. Design, detail, perspective, and good colourist. Terms, 30s. per week. Unexceptionable references.—Address, B. 9, Alfred-street, St. George's-road, Peckham, S.E.

AN experienced CLERK of WORKS, just completing a job, is desirous of a RE-ENGAGEMENT.—Address, C. J. Mr. Wright's, Hillingdon, Middlesex.

A CLERK of WORKS, thoroughly experienced, desires a RE-ENGAGEMENT. Joiner by trade. First-class testimonials, references, &c.—Address, 573, Office of "The Builder."

TO BUILDERS, CONTRACTORS, &c.

AN experienced BUILDER'S CLERK and ASSISTANT desires a RE-ENGAGEMENT. Used to estimating, measuring, bookkeeping, prime cost, and general jobbing. Unexceptionable references.—Address, S. D. R. Chattell & Son, Upper Seymour-street, Portman-square, W.

AN experienced BUILDER'S CLERK, qualified in every respect to estimate and measure up works, make out accounts, and well acquainted with the duties of a builder's and contractor's office, requires an ENGAGEMENT. References and testimonials first-class.—Address, G. S. care of Mr. Tyler, No. 259, Queen's-road, Dalston, E.

TO BUILDERS, DECORATORS, AND OTHERS.

A THOROUGH BUILDER'S CLERK desires a RE-ENGAGEMENT. Can measure up, estimate, and keep cost price. 27 years of age, married. Moderate salary. Excellent character.—Address, BUILDER, 20, College place, King's-road, Chelsea, S.W.

TO BUILDERS AND CONTRACTORS.

A THOROUGHLY practical GENERAL FOREMAN requires a RE-ENGAGEMENT, to take the entire charge of a job. Town or country. A Joiner by trade. Good references.—Address, W. 169, Cambridge-street, Pimlico, S.W.

ARCHITECT'S ASSISTANT.—A Gentleman, aged 21, seeks an ENGAGEMENT, as above, at a small salary. Has had seven years' experience in first-class offices.—Address, G. CUTHBERT, Thames Bank House, Mortlake S.W.

AN ARCHITECT and SURVEYOR'S ASSISTANT desires a RE-ENGAGEMENT. Can survey and level. Is competent to prepare complete sets of drawings, with specifications and details, also well up in construction. Good references. Salary moderate.—Address, ARCHITECT, Harthead, via Normanton Yorkshire.

TO ENGINEERS AND ARCHITECTS.

AN ASSISTANT, who has had extensive experience in Railway Drainage and Architectural Constructive Works, desires an ENGAGEMENT, temporary or otherwise. Terms not an object. Is an experienced surveyor, and would undertake Parliamentary surveying on very moderate terms. Most satisfactory references offered. Would go abroad.—Address, M. B. 24, King William-street, Strand.

TO ARCHITECTS, &c.

AN ASSISTANT is desirous of an ENGAGEMENT. He is a good Gothic and Italian draughtsman, with a thorough knowledge of perspective, colouring, details, and construction. Specimens and reference will best speak as to ability. Terms moderate.—Address, ALPHA, 4, Markham-street, Chelsea.

A CARPENTER and JOINER (member of a Christian church) is very anxious for EMPLOYMENT. Wages not so much an object. Aged 28.—Address, H. H. Boddington's Library, Notting-hill Gate, W.

A CARPENTER and JOINER, well used to Bench Work, and the usual work of a Jobbing Shop, wishes to obtain EMPLOYMENT, in town or country. Constant employment the first consideration.—Address, No. 566, Office of "The Builder."

EMPLOYMENT WANTED, by a JOINER'S MACHINE HAND, to Work a General Joiner, Trying-up Moulding Machines, or Saw Bench.—Address, W. 24, White Hart-street, Kennington Park-road.

TO MANUFACTURERS OF BRICKS, PIPES, TILES, &c.

REQUIRED by a practical Man, a RE-ENGAGMENT as MANAGER. Experienced in erecting works and machinery. Thorough knowledge of the manufacture of fire-bricks, sewage-pipes, building bricks, by hand and machinery, roofing tiles, &c. Highest references and security.—Address, B. Office of "The Builder."

TO BUILDERS.

STAIRCASE and HANDRAIL WORK WANTED, by Piece or otherwise, in Town or country. No objection to joiner's work.—Address, G. P. 13, Palmerston-terrace, Grosvenor Park, Camberwell, London, S.E.

TO BUILDERS AND CONTRACTORS.

THE Advertiser WANTS a SITUATION as TIME and STORE KEEPER, or CLERK. Good references to late employer.—Address, G. N. 14, Clayton-street, Caledonian-road, N.

TEMPORARY ASSISTANCE.—A Surveyor of great experience in Measuring, Estimating, and Quantities, will be glad to give TEMPORARY ASSISTANCE as he has great practical experience in taking and arranging extras and omissions. Would undertake the books and accounts of a Builder. Address, SURVEYOR, 11, Duke-street, Portland-place, London, W.

TO BUILDERS, CONTRACTORS, STONE MERCHANTS, &c.—TO BE LET at Camberwell, at Christmas next, a large and commodious WHARF, with two cottages, offices, warehouses, stabling, and large private dock adjoining the Surrey Canal.—Apply at 31, Addington-square, S.E.

ELIGIBLE BUILDING LAND TO BE LET or SOLD, for cottage or villa residences, in several localities within easy distance from London. Also a few SITES for SHOPS and TAVERNS. Advances if required.—Apply to Messrs. KENNARD & BUCK, Architects and Surveyors, 39, Finsbury-street.

BUILDING LAND.—TO BE LET, by the Leathersellers' Company BUILDING LAND at Forest-hill, within five minutes' walk of the Forest-hill Railway Station. Roads and sewers completed.—For plans and further particulars, apply personally, to Mr. ANDREW WILSON, Surveyor, No. 7, East India Avenue, Leadenhall-street, E.C.

KENSINGTON, HOLLAND PARK.—First-class BUILDING LAND TO BE LET, with the option of purchasing the freehold.—Apply to Messrs. BOLTON & GRYLLS HILL, Solicitors, Elm-court, Temple; R. H. PIERPOINT, Esq. Solicitor, 50, Leicester-square, W.C.; Mr. WM. SIM, Architect, 1, Dane-inn, Strand, W.C.; or Mr. J. BROADBRIDGE, Surveyor, 1, Stanhope-terrace, South Kensington, W.

CRYSTAL PALACE COMPANY. — To BUILDERS and OTHERS.—CRYSTAL PALACE ESTATE.—The Crystal Palace Company are prepared TO LET, on Building Leases, for a term of 99 years, certain portions of their FREEHOLD PROPERTY abutting upon the Penge-road, Thicknood-road, Anerley-road, and Palace-road. Plans and conditions may be seen on application to JOHN NORTON, Esq. Architect, 34, Old Broad-street, W.; or to Mr. HART, Accountant, Crystal Palace, Sydenham, S.E.

WANDSWORTH COMMON (BOLINGBROKE GROVE). — TO BE LET, fronting the Common, within ten minutes' walk of the Wandsworth Common Railway Station, and fifteen minutes' from the Clapham Junction Station, FOUR 10-room-ed HOUSES. Rents 40l. and 50l. per annum. Other houses close by 20l. to 30l. per annum.—Apply to Mr. SHORT, Post-office, New Wandsworth; or of HOOPER, CORPE, & VARLEY, 3, Parliament-street, Queen-street, Westminster, S.W.

CITY of LONDON.—BUILDING LAND FOR SALE, by TENDER.—The Guardians of the East London Union will meet on WEDNESDAY, the 7th of DECEMBER, 1870, at TWELVE o'clock precisely, at their Board-room, No. 1, Devonshire-square, Bishopsgate, in the said City, to receive TENDERS for a CORNER BUILDING SITE, formerly No. 5, Bomfield-street, Moorfields, near to the Broad-street and Moorgate-street Railway Stations, and containing a superficial area, of about 1,500 feet. Sealed Tenders, addressed to the Guardians, must be forwarded, not later than the 5th of DECEMBER, next, to the Office of Messrs. A. J. BAYLIS & SON, Church-court, Old Jewry, where particulars and conditions of Sale may be obtained. The Guardians do not bind themselves to accept the highest or any Tender.

WATERSIDE PREMISES TO BE LET, on Lease or otherwise, situated in Ravensbourne-street, Greenwich, Kent, having a frontage on Deptford Creek, thoroughly wharfed in, of 92 feet; depth of wharf, 175 feet, and the width of the rear abutting on the New Norman-road, near the London high road, 110 feet. The said premises will be found to be most suitable for the discharge of ships alongside, having an ample depth of water, and they are in all respects well situated and valuable.—Apply at the Office of SMITH, SHEPHERD, & ADAMS, Oak Merchants, Sun-wharf, Church-street, Deptford; or at their Office, New Sun-wharf, Ravensbourne-street, Greenwich.

TO BUILDERS. — TO BE LET, a most eligible PLOT of LAND, a part of the Ashburnham Estate, having about 240 feet frontage in King's-road, opposite St. Mark's College. The plot of ground is inclosed in a ring-fence 8 feet high, and there is a workshop of large dimensions, with general offices, well built, and lighted with sashes and sky-lights. The whole affords every facility for builders. The terms and ground-rents are low. It is within a short distance of Chelsea Station, on the West London Railway, and easy of access to steamboats; omnibuses pass within two minutes' walk every ten minutes.—For terms, apply at the Office, Ashburnham Estate, Chelsea.

TO BUILDERS.—The LEASE (15 years), GOODWILL, and STOCK-IN-TRADE of an old-established BUILDER'S BUSINESS TO BE SOLD. The late proprietor (deceased) had an extensive business in and around the increasing town of Barnet. The premises are well adapted for business, being situate in the centre of the town, and having a good dwelling-house and offices communicating with same.—For terms, apply to Messrs. DUCKWORTH & CLAYDEN, Hadley, Barnet; or Mr. TOWNSEND, Lingfield-road, Wimbledon.

TO BUILDERS, TIMBER MERCHANTS, and OTHERS.—TO BE LET, on LEASE, very extensive PREMISES, situate in Page's Walk, Bermondsey, close to the Bricklayer's Arms Station of the South Eastern, and the Brighton and South Coast Railways, containing an area of nearly Three-quarters of an Acre. The premises consist of the necessary buildings for a large Sawing and Planing Mill, fitted with a 25-horse power condensing steam-engine and two boilers attached, shafting and driving riggers, two self-acting circular saw benches, two pit frames, and a planing machine; stabling for nine horses, counting-houses, two sheds, and in addition thereto a large open space for piling deals or other purposes. The premises are suitable for a builder, timber merchant, or any trade where steam powers and large areas are necessary. For a building business these premises are admirably adapted, as there is ample room to erect workshops of large size, and still leave a capacious open yard. The engine and machinery will be let with the premises.—Inquire of FULLER, HORSEY, SON, & CO. Billiter-square, City; or of BARTRAM & CO. Salvadore-road, Lambeth.

FREEHOLD BUILDING LAND TO LET. TUFNELL PARK WEST, and Estates adjoining, five minutes' walk of two railway stations, improved ground-rents purchased, and materials advanced.

THE PARK, HIGHGATE.—For houses from 60l. to 70l. per annum.

SYDENHAM.—For houses 25l. per annum. Ground-rent, 3l. 10s. Advances made.

LEE, KENT.—For houses of 20l. per annum. Advances made.

SUTTON.—For houses from 20l. to 140l. per annum. Advances made.

LOUGHTON PARK.—For houses of from 60l. to 70l. per annum.

HARROW.—For houses from 60l. to 100l.

BEXLEY.—For houses from 60l. to 70l. per annum. Advances made.

Apply to Mr. H. A. ALEXANDER, Architect and Surveyor, 16, King William-street, City.

FREEHOLD BUILDING GROUND, ST. PAUL'S CHURCHYARD.—The Commissioners of Sewers of the City of London will meet in the Guildhall of the said City on TUESDAY, the 22nd NOVEMBER next, at HALF-PAST TWELVE o'clock precisely, to receive PROPOSALS for taking on a BUILDING LEASE, for a term of 80 years (the first year at a peppercorn) a PLOT of very valuable FREEHOLD GROUND, commandingly situate at the south-west corner of St. Paul's Churchyard, and known as No. 1, St. Paul's Churchyard, at the corner of Ludgate-hill. Further particulars, with conditions and printed forms of proposal, may be had on application at this Office, where a plan of the ground may also be seen. The Commissioners do not bind themselves to accept the highest or any proposals deemed eligible. Persons making proposals must attend personally, or by a duly authorised agent, on the above-mentioned day, at HALF-PAST TWELVE o'clock precisely, and the party whose offer is accepted will be required to execute an agreement and bond at the same time. Proposals, endorsed on the outside "Tender for Ground, St. Paul's Churchyard," must be sent, addressed to the undersigned, before TWELVE o'clock on the said day of treaty.—By order of the Commissioners of Sewers of the City of London,

JOSEPH DAW, Principal Clerk.

Sewers Office, Guildhall, 19th September, 1870.